GROUP 54C

SMART WIRING SYSTEM (SWS) USING SWS MONITOR

CONTENTS

Main Index
Group TOC

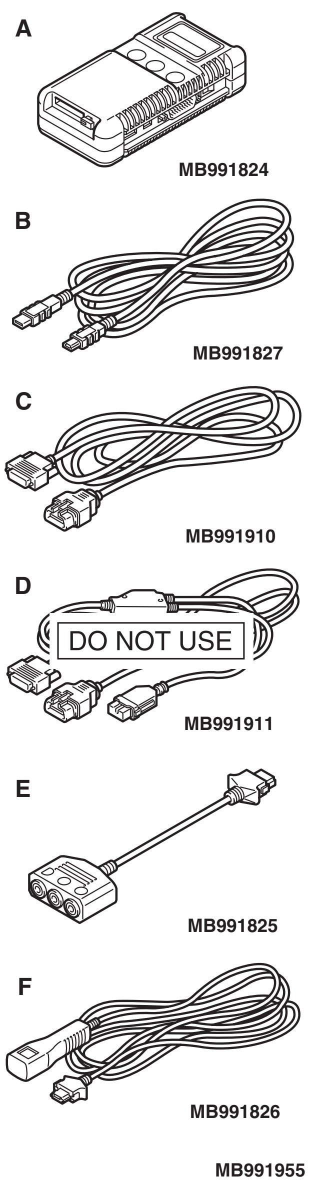
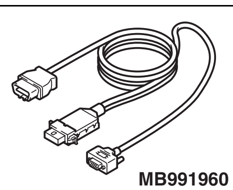
GENERAL INFORMATION

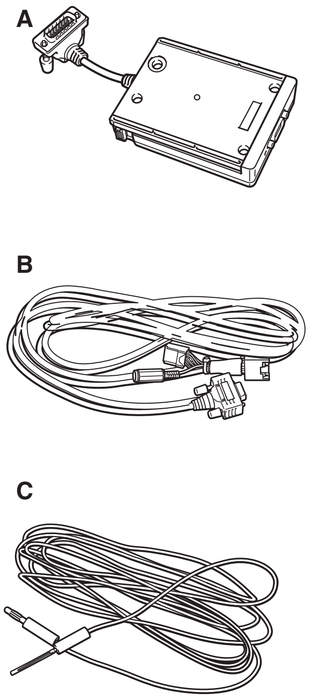
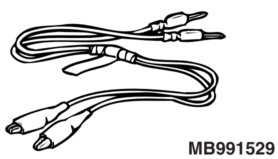
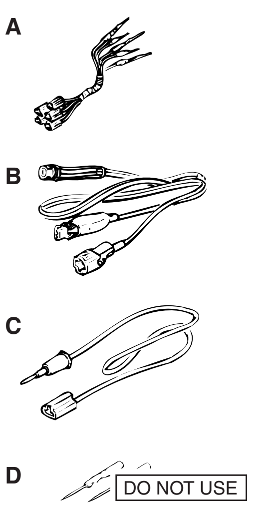
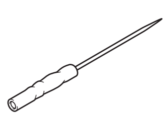
M1549000100759

For the general information regarding the SWS, refer to GROUP 54B – General Information P.54B-2.

SPECIAL TOOLS

M1549000301091

Tool	Number	Name	Use
	MB991955 A: MB991824 B: MB991827 C: MB991910 D: MB991911 E: MB991825 F: MB991826	M.U.T.-III sub-assembly A: Vehicle communication interface (V. C. I.) B: M.U.T.-III USB cable C: M.U.T.-III main harness A (Vehicles with CAN communication system) D: M.U.T.-III main harness B (Vehicles without CAN communication system) E: M.U.T.-III measurement adapter F: M.U.T.-III trigger harness	SWS communication line check (ECU check and service data) ⚠ CAUTION **M.U.T.-III main harness A (MB991910) should be used. M.U.T.-III main harness B should not be used for this vehicle.**
	MB991960	Intermediate wiring harness for SWS customisation	SWS communication line check (ECU check, service data)

Tool	Number	Name	Use
 B991813	MB991813 A: MB991806 B: MB991812 C: MB991822	SWS monitor kit A: SWS monitor cartridge B: SWS monitor harness (for column-ECU) C: Probe harness	SWS communication line check (ECU check and service data)
 MB991529	MB991529	Diagnosis code check harness	Input signal check by using a voltmeter
 MB991223AZ	MB991223 A: MB991219 B: MB991220 C: MB991221 D: MB991222	Harness set A: Test harness B: LED harness C: LED harness adapter D: Probe	Continuity check and voltage measurement at harness wire or connector A: For checking connector pin contact pressure B: For checking power supply circuit C: For checking power supply circuit D: For connecting a locally sourced tester
 MB992006	MB992006	Extra fine probe	Continuity check and voltage measurement at harness wire or connector

Main Index
Group TOC

TROUBLESHOOTING

PRIOR TO TROUBLESHOOTING

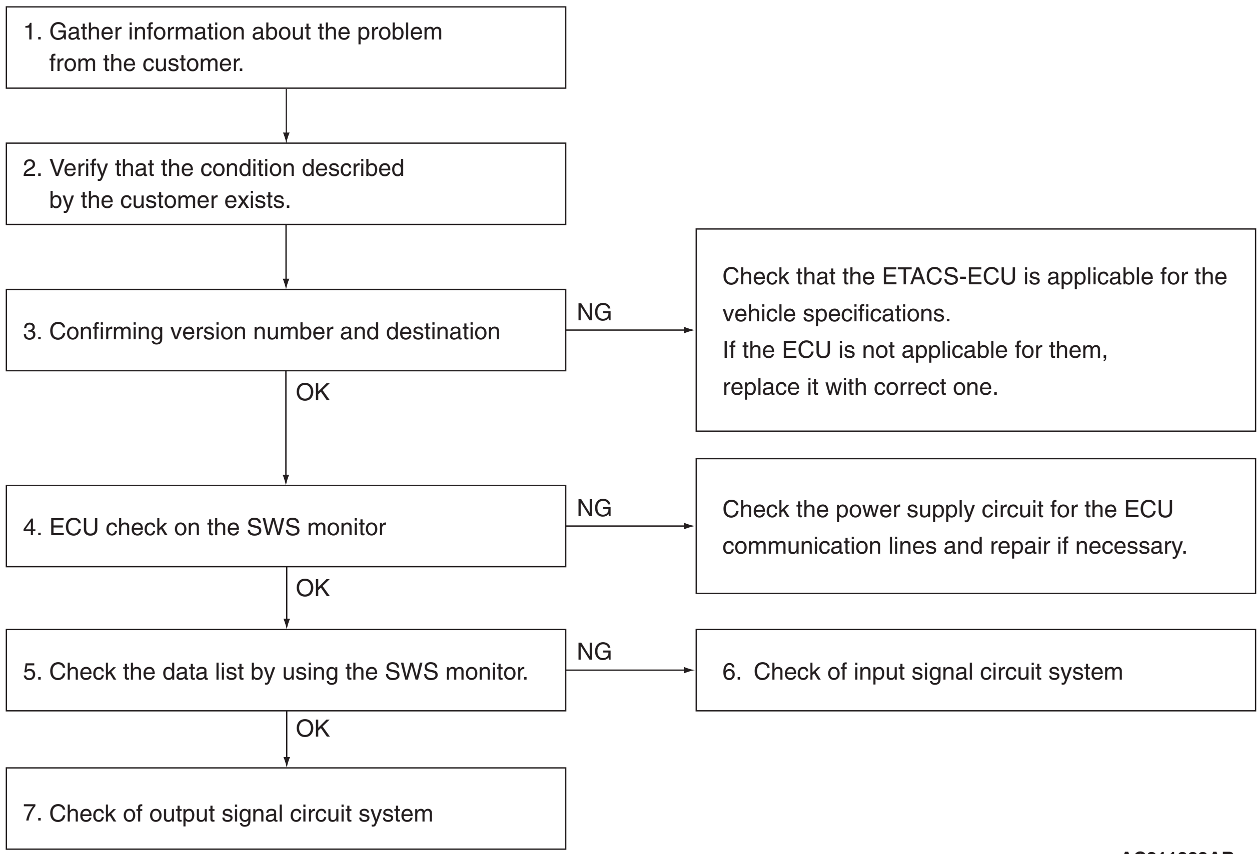
M1549014700798

Before carrying out troubleshooting, check the following two items.

- Make sure that the ETACS-ECU and the junction block (J/B) are connected securely.
- Check that the system fuses and fusible links are not burned out.

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

M1549000500984



AC211883AB

1. Gather information about the problem from the customer.
2. Verify that the condition described by the customer exists.

   NOTE: If an error occurs in the SWS communication line, the ECU isolated from the communication line performs a fail-safe or backup operation, so the problem may not match the one shown in the Trouble Symptom Chart. However, the cause of the failure can be tracked down by performing the following troubleshooting with the SWS monitor.
3. Confirming version number and destination

   Check whether the SWS version number (0) and destination (EU W/O DRL) meet the vehicle specifications. If they are different, replace the ETACS-ECU with a correct one.
4. ECU check by using the SWS monitor

   Check whether the communication status of the input- or output-signal-side ECU associated with the defective function is normal.
   - If "OK " is displayed for all related ECUs, they communicate with each other normally and the input or output signal circuit system may be defective. Therefore, check SWS monitor service data.
   - If "NG" is displayed for any of the related ECUs, something may be wrong with the ECU for which "NG" appears, its power supply or earthing system, or a wiring harness or connector between the SWS monitor and the ECU. Check the wiring harness and connectors associated with the ECU and examine the ECU itself.

Main Index
Group TOC

5. SWS monitor data list

   Select the defective function from the function-specific diagnostic menu, and check the service data that appears for each function item.

   NOTE: In addition to the function-specific diagnostic menu, a service data menu is available for SWS monitor service data to check all items for each ECU.

   i. When the SWS communication line is monitored: You can determine whether the problem lies in the input or output signal circuit system by checking whether communication data is correct.
      - The switch condition does not meet the service data display: Input signal system related to defective functions
      - The switch condition meets the service data display: Output signal system related to defective functions

   ii. When the door communication line is monitored: The communication data, which the power window main switch (power window module) transmits, can be confirmed. Determine the cause by changing the point where a probe is inserted.
      - The switch condition does not meet the service data display: Wiring harness wire(s) or connector(s) between the power window main switch and the probe-inserted point as well as the power window main switch
      - The switch condition meets the service data display: Wiring harness wire(s) or connector(s) between each power window sub switch and the probe-inserted point as well as the power window sub switch

6. Check of input signal circuit system

   Check relevant switch, sensor, input signal-side ECU and their wiring harness and connector.

7. Check of output signal circuit system

   Check an output signal-side ECU, electrical load components and their wiring harness and connector.

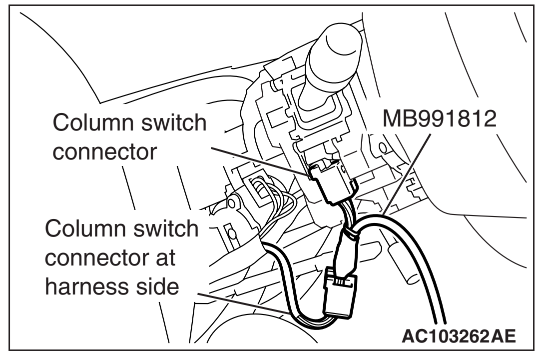
HOW TO CONNECT THE SWS MONITOR

M1549014800762

⚠ CAUTION

Always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting the SWS monitor and the M.U.T.-III.

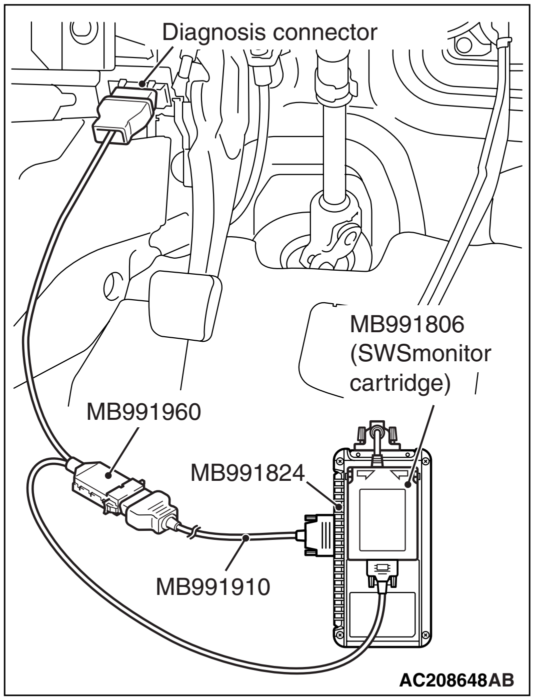
HOW TO CONNECT THE SWS COMMUNICATION LINE <SPECIAL TOOL SWS MONITOR HARNESS (FOR COLUMN-ECU) MB991812>



1. Remove the steering column cover.
2. Remove the steering column switch connector.
3. Connect special tool SWS monitor harness (for column-ECU) MB991812.

Main Index
Group TOC

<WHEN CONNECTING THE DIAGNOSIS CONNECTOR BY USING THE INTERMEDIATE WIRES FOR SWS MONITOR CUSTOMISATION>



1. Connect the special tool Intermediate wires (MB991960) for SWS monitor customisation to the special tool M.U.T.-III main harness A (MB991910).
2. Connect the M.U.T.-III main harness A (with the intermediate wires) to the special tool V.C.I. (MB991824) .
3. Connect the intermediate wires for SWS monitor customisation to the diagnosis connector and the SWS monitor cartridge.

ECU CHECK

M1549014900703

1. Use the M.U.T.-III and the SWS monitor to check ECUs.
2. The following ECUs can be checked by using the M.U.T.-III and the SWS monitor.

NOTE: If a malfunction is found by the "ECU check", proceed "Symptom Procedure" (Refer to P.54C-29).

SWS monitor-compatible ECUs and their conditions

Item No.	ECUs to be checked	Display on M.U.T.-III	Normal condition	ECU conditions
Item 80	Column switch (column-ECU)	COLUMN ECU	OK*	All of the column switch, power supply, earth and interconnecting communication line are normal
Item 83	ETACS-ECU	ETACS ECU	OK	All of the ETACS-ECU switch, power supply, earth and interconnecting communication line are normal
–	Other SWS-related ECUs	Other ECUs	NG	ECUs are not used

*NOTE: *: If "NG" is displayed beside the ETACS-ECU while the ignition switch is off, "NG" is also displayed beside the column-ECU.*

DATA LIST CHECK

M1549015000770

1. Use the M.U.T.-III and the SWS monitor to check "DATA LIST." This "DATA LIST" check is applicable for signals, which are transmitted and received through the SWS communication line and the communication lines routed from one door to another. For the input signals which are not applicable for the SWS monitor check, refer to pulse check procedure P.54C-32.

NOTE: If a problem is found in the "DATA LIST" check, refer to the Problems during Input Signal Check <Service data, function diagnosis or pulse check> (Refer to P.54C-32).

2. The following input signals can be checked by using the M.U.T.-III and the SWS monitor.

Main Index
Group TOC

DATA LIST REFERENCE TABLE

COLUMN SWITCH (COLUMN-ECU)

Item No.	Check item	Display on M.U.T.-III	Check condition	Normal condition
00	Headlamp switch	HEADLAMP SW	lighting switch: HEAD	ON
			lighting switch: Other than HEAD	OFF
01	Tail lamp switch	TAIL LAMP SW	Lighting switch: TAIL	ON
			Lighting itch: OFF	OFF
02	Dimmer switch	DIMMER SW	Dimmer switch: ON	ON
			Dimmer switch: OFF	OFF
03	Passing lamp switch	PASSING SW	Passing lamp which: ON	ON
			Passing lamp which: OFF	OFF
05	Windshield intermittent wiper switch	INT WIPER SW	Wiper switch: INT	ON
			Wiper switch: Other than INT	OFF
06	Windshield low-speed wiper switch	LO WIPER SW	Wiper switch: LO	ON
			Wiper switch: Other than LO	OFF
07	Windshield high-speed wiper switch	HI WIPER SW	Wiper switch: HI	ON
			Wiper switch: Other than HI	OFF
08	Wind shield mist wiper switch	MIST WIPER SW	Wiper switch: Mist	ON
			Wiper switch: Other than mist	OFF
09	Windshield washer switch	FRONT WASH. SW	Windshield washer switch: ON	ON
			Windshield washer switch: OFF	OFF
10	Turn-signal lamp switch (RH)	TURN SIG. RH	Turn-signal lamp switch: RH	ON
			Turn-signal lamp switch: Other than RH	OFF
11	Turn-signal lamp switch (LH)	TURN SIG. LH	Turn-signal lamp switch: LH	ON
			Turn-signal lamp switch: Other than LH	OFF
13	Rear wiper switch	REAR WIPER SW	Rear wiper switch: INT	ON
			Rear wiper switch: Other than INT	OFF
14	Rear washer switch	REAR WASH. SW	Rear wiper switch: Washer	ON
			Rear wiper switch: Other than washer	OFF
15	With or without windshield intermittent wiper control	INT WIP KNOB	Vehicles with intermittent wiper control	EQUIP
			Vehicles without intermittent wiper control	NONE

Main Index
Group TOC

ETACS-ECU

Item No.	Check item	Display on M.U.T.-III	Check condition	Normal condition
30	Ignition switch (IG1)	IG SW(IG1)	Ignition switch: ON or START	ON
			Ignition switch: LOCK (OFF) or ACC	OFF
31	Ignition switch (ACC)	IG SW(ACC)	Ignition switch: ACC or ON	ON
			Ignition switch: LOCK (OFF) or START	OFF
32	Driver's door switch	DR DOOR SW	Driver's door switch ON (The driver's door is open).	ON
			Driver's door switch OFF (The driver's door is closed).	OFF
34	Multimode keyless entry system	KEYLESS ENTRY	1. Keyless entry transmitter LOCK switch: ON 2. Turn ON the keyless entry transmitter LOCK switch again (For the second switch operation, hold pressing the switch for at least one second within 30 seconds after the switch is turned on at first)	MULTI CLOSE (only momentarily when switch is operated)
			1. Keyless entry transmitter UNLOCK switch: ON 2. Turn ON the keyless entry transmitter UNLOCK switch again (For the second switch operation, hold pressing the switch for at least one second within 30 seconds after the switch is turned on at first)	MULTI OPEN (only momentarily when switch is operated)
			1. When multimode is working 2. Turn on any function of the keyless entry transmitter again.	Multi-stop (only momentarily when switch is operated)
			Other than the conditions above	WAITING
43	Buzzer	BUZZER	1. Ignition switch: OFF (key removed) 2. Lighting switch: TAIL or HEAD 3. Driver's door switch: ON (Driver's door: Open)	ON
			When requirements for sounding each warning buzzer are not satisfied	OFF
54	Intermittent wiper operation period	INT TIME SPEC	Maximum 32 seconds	MAX.32s Spec

NOTE: For item number 43 "BUZZER", the M.U.T.-III also displays "ON" when the door-ajar warning buzzer or turn-signal lamp operation sound function is triggered.

Main Index
Group TOC

FUNCTION DIAGNOSIS

The table below shows the service data and their normal condition, which are displayed during the "FUNCTION DIAG." The row "Normal condition" shows values, which are shown when each operation is made.

WIPER

Item	Input signal	Item No.	Display on M.U.T.-III	Normal condition
F.WIPER INT (intermittent)	Windshield intermittent wiper switch	05	INT WIPER SW	ON
	Windshield low-speed wiper switch	06	LO WIPER SW	OFF
	Windshield high-speed wiper switch	07	HI WIPER SW	OFF
	Wind shield mist wiper switch	08	MIST WIPER SW	OFF
	Windshield washer switch	09	FRONT WASH. SW	OFF
	Ignition switch (ACC)	31	IG SW(ACC)	ON
F.WIPER LO (low speed)	Windshield intermittent wiper switch	05	INT WIPER SW	OFF
	Windshield low-speed wiper switch	06	LO WIPER SW	ON
	Windshield high-speed wiper switch	07	HI WIPER SW	OFF
	Wind shield mist wiper switch	08	MIST WIPER SW	OFF
	Windshield washer switch	09	FRONT WASH. SW	OFF
	Ignition switch (ACC)	31	IG SW(ACC)	ON

Main Index
Group TOC

Item	Input signal	Item No.	Display on M.U.T.-III	Normal condition
F.WIPER HI (high speed)	Windshield intermittent wiper switch	05	INT WIPER SW	OFF
	Windshield low-speed wiper switch	06	LO WIPER SW	OFF
	Windshield high-speed wiper switch	07	HI WIPER SW	ON
	Wind shield mist wiper switch	08	MIST WIPER SW	OFF
	Windshield washer switch	09	FRONT WASH. SW	OFF
	Ignition switch (ACC)	31	IG SW(ACC)	ON
F.WIPER MIST	Windshield intermittent wiper switch	05	INT WIPER SW	OFF
	Windshield low-speed wiper switch	06	LO WIPER SW	OFF
	Windshield high-speed wiper switch	07	HI WIPER SW	OFF
	Wind shield mist wiper switch	08	MIST WIPER SW	ON
	Windshield washer switch	09	FRONT WASH. SW	OFF
	Ignition switch (ACC)	31	IG SW(ACC)	ON
F.WIPER WASH	Wind shield mist wiper switch	08	MIST WIPER SW	OFF
	Windshield washer switch	09	FRONT WASH. SW	ON
	Ignition switch (ACC)	31	IG SW(ACC)	ON

REAR WIPER

Item	Input signal	Item No.	Display on M.U.T.-III	Normal condition
REAR WIPER	Rear wiper switch	13	REAR WIPER SW	ON
	Rear washer switch	14	REAR WASH. SW	OFF
	Ignition switch (ACC)	31	IG SW(ACC)	ON
REAR WASHER	Rear washer switch	14	REAR WASH. SW	ON
	Ignition switch (ACC)	31	IG SW(ACC)	ON

Main Index
Group TOC

LIGHTING

Item	Input signal	Item No.	Display on M.U.T.-III	Normal condition
OFF	Headlamp switch	00	HEADLAMP SW	OFF
	Tail lamp switch	01	TAIL LAMP SW	OFF
	Passing lamp switch	03	PASSING SW	OFF
	Ignition switch (IG1)	30	IG SW(IG1)	ON
TAIL LAMP	Headlamp switch	00	HEADLAMP SW	OFF
	Tail lamp switch	01	TAIL LAMP SW	ON
	Passing lamp switch	03	PASSING SW	OFF
	Ignition switch (IG1)	30	IG SW(IG1)	ON
HEADLAMP LO (low-beam)	Headlamp switch	00	HEADLAMP SW	ON
	Passing lamp switch	03	PASSING SW	OFF
	Ignition switch (IG1)	30	IG SW(IG1)	ON
HEADLAMP HI (high-beam)	Headlamp switch	00	HEADLAMP SW	ON
	Dimmer switch	02	DIMMER SW	ON
	Passing lamp switch	03	PASSING SW	OFF
	Ignition switch (IG1)	30	IG SW(IG1)	ON
F.FOG LAMP	Headlamp switch	00	HEADLAMP SW	Either of items is ON
	Tail lamp switch	01	TAIL LAMP SW	
	Ignition switch (IG1)	30	IG SW(IG1)	ON
PASSING LAMP	Passing lamp switch	03	PASSING SW	ON

NOTE:

- *When checking the input signals (off, tail, low-beam or high-beam), turn the ignition switch to the "ON" position in order to disable the headlamp automatic-shutdown function. However, the titles on the M.U.T.-III screen will not be highlighted as this has nothing to do with actual lamp operation.*
- *For checking item "HEADLAMP HI", the M.U.T.-III displays "OFF" on the item No.2 "DIMMER SW" when the headlamps are at high-beam. Therefore, the M.U.T.-III should display "ON" momentarily when the dimmer switch is operated.*

Main Index
Group TOC

TURN-SIGNAL LAMP

Item	Input signal	Item No.	Display on M.U.T.-III	Normal condition
Turn-signal lamp (RH)	Turn-signal lamp switch (RH)	10	TURN SIGNAL RH SW	ON
	Turn-signal lamp switch (LH)	11	TURN SIGNAL LH SW	OFF
	Ignition switch (IG1)	30	IGNITION SW IG1	ON
Turn-signal lamp (LH)	Turn-signal lamp switch (RH)	10	TURN SIGNAL RH SW	OFF
	Turn-signal lamp switch (LH)	11	TURN SIGNAL LH SW	ON
	Ignition switch (IG1)	30	IGNITION SW IG1	ON

BUZZER

Item	Input signal	Item No.	Display on M.U.T.-III	Normal condition
Lighting monitor buzzer	Headlamp switch	00	HEADLAMP SW	Either is on
	Tail lamp switch	01	TAIL LAMP SW	
	Ignition switch (IG1)	30	IGNITION SW IG1	OFF
	Driver's door switch	32	DRIVER DOOR SW	ON
	Buzzer	43	Buzzer	ON

NOTE: The headlamp automatic-shutdown function works in approximately one second after the lighting monitor buzzer starts sounding, and then the buzzer ceases sounding.

ETACS SWITCH DATA CHART

Item No.	Check items	Display on M.U.T.-III	Check conditions	Normal conditions
03	Key reminder switch	KEY REMIN SW	Key reminder switch: ON (when the ignition key is pulled off)	ON
			Key reminder switch: OFF (Insert the ignition key)	OFF
04	Hazard warning lamp switch	HAZARD LMP SW	Hazard warning lamp switch: ON (when the switch is operated)	ON
			Hazard warning lamp switch: ON (when the switch is not operated)	OFF
05	Passenger's door switch	PASS DOOR SW	Passenger's door switch ON (The passenger’s door is open).	ON
			Passenger's door switch OFF (The passenger's door is closed).	OFF
09	Rear wiper auto-stop switch	R.WIPER A/STOP	When rear wiper is operating	ON
			When the rear wiper is not working	OFF

Item No.	Check items	Display on M.U.T.-III	Check conditions	Normal conditions
10	Fog lamp switch	F.FOG LAMP SW	Fog lamp switch: ON (when the switch is operated)	ON
			Fog lamp switch: ON (when the switch is not operated)	OFF
14	Electric remote-controlled door mirror (folding/unfolding) switch	EL RET MIR SW	Electric remote-controlled door mirror (folding/unfolding) switch: ON (when the switch is operated)	ON
			Electric remote-controlled door mirror (folding/unfolding) switch: ON (when the switch is not operated)	OFF
21	Driver's door lock actuator lock switch	DR DOR LCK SW	Driver's door: Locked	ON
			Driver's door: Other than "locked"	OFF
22	Driver's door lock actuator unlock switch	DR DOR ULK SW	Driver's door: Unlocked	ON
			Driver's door: Other than "Unlocked"	OFF
26	Central door locking	CNTR DOOR LCK	When the central door locking operates	ON
			When the central door locking does not operate	OFF
27	Central door unlock	CNTR DOOR ULCK	When the central door unlocking operates	ON
			When the central door unlocking does not operate	OFF
36	Diagnosis connector	M.U.T. DIAG CON.	Diagnosis control line: Earthed	ON
			Diagnosis control line: Not earthed	OFF
38	Windshield wiper auto-stop switch	F.WIP A/STOP	When the windshield wipers are operated	ON
			When the windshield wipers are off	OFF
39	Headlamp specifications	2/4 BULBS SW	ON: single-bulb type, OFF: dual-bulb type	4BULBS
40	All of the door switches	ALL DOOR SW	Either door: open	ON

ETACS ANALOGUE DATA CHART

Item No.	Check items	Display on M.U.T.-III	How to check
02	Windshield intermittent wiper volume	WPR VOL VOLT	Displays the voltage in the windshield wiper intermittent volume. Changes in accordance with the position of the windshield wiper intermittent volume.
03	Vehicle speed signal	SPEED SENSOR	Displays the vehicle speed. Changes in accordance with the vehicle speed.
06	Power window key-off timer period	P/W KY OF TMR	Displays power window key-off timer period (timing).
08	Windshield intermittent wiper interval	WPR INT TIME	Displays windshield intermittent wiper interval (with chart)

Main Index
Group TOC

ACTUATOR TEST REFERENCE TABLE

M1549001000108

Item No.	Item name	Driven component
01	Rear wiper switch	Rear wiper
02	Front wiper switch	Front wiper (LO)
03	High-speed wiper switch	Front wiper (HI)
04	Rear washer switch	Rear washer
05	Front washer switch	Front washer
06	Electric folding door mirror SW	Electric folding door mirrors (fold/unfold)
07	Centre door locking "LOCK" SW	Central door locking
08	Centre door locking "UNLOCK" SW	Central door unlocking
09	Turn-signal lamp (LH) switch	Turn-signal lamp (blinks)
10	Turn-signal lamp (RH) switch	
12	Tail lamp	Tail lamp (illuminates)
13	Headlamp	Headlamp (LO: illuminates)
14	Headlamp HI	Headlamp (HI: illuminates)
15	Fog lamp	Fog lamp (illuminates)
17	Turn-signal lamp (LH)	Turn-signal lamp (Illuminates)
18	Turn-signal lamp (RH)	
19	Buzzer	Buzzer (integrated into ETACS-ECU)
20	Room lamp 0%	Room lamp (turns off)
21	Room lamp 60%	Room lamp (60% illumination)
22	Room lamp 100%	Room lamp (100% illumination)
24	P/W multi-close	Multi-mode keyless (power windows closing)
25	P/W multi-open	Multi-mode keyless (power windows opening)
26	P/W multi-stop	Multi-mode keyless (power windows stop)

M.U.T.-III DRIVE RECORDER FUNCTION

M1549026000105

1. The SWS monitor cartridge memory can store the ECU check results, the service data, the communication data obtained by the function diagnosis. This communication data can be displayed as a chart or graphical form.
2. If data obtained by the drive recorder function has to be stored for long time, the data can be transferred to the SWS monitor cartridge. By doing this, you can disconnect the M.U.T.-III to prevent excessive battery drain.

   NOTE: For the details about the M.U.T.-III drive recorder function, refer to M.U.T.-III User's Manual.

DIAGNOSTIC FUNCTION

M1549028900289

HOW TO READ DIAGNOSIS CODE

Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points – Diagnosis Function P.00-7.

ERASING DIAGNOSIS CODE

Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points – Diagnosis Function P.00-7.

Main Index
Group TOC

DIAGNOSIS CODE CHART

M1549000700988

Code No.	Diagnosis item	Reference page
U1700	Trouble in SWS communication line system	P.54C-16
U1701	Communication error with column switch	P.54C-17
U1073	Bus off	P.54C-18
U1100	Engine-ECU <M/T> or Engine-CVT-ECU <CVT> time-out (related to engine)	P.54C-19
U1101	Engine-CVT-ECU time-out (related to CVT) <CVT>	
U1102	ABS-ECU or ASC-ECU time-out	P.54C-20
U1110	Meter and A/C-ECU time-out (related to A/C)	P.54C-21
U1108	Meter and A/C-ECU time-out (related to meter)	
U1128	Meter and A/C-ECU failure information (related to meter)	P.54C-23
B1706	Blown fuse is detected in fuse No.31 (hazard fuse).	P.54C-24
B1707	Open circuit is detected in the flasher circuit.	P.54C-25
B1708	An open circuit is detected in the variable intermittent wiper control switch.	P.54C-27
B1709	ETACS-ECU internal error (EEPROM problem)	P.54C-28
B1710	ETACS-ECU internal error (ROM problem)	
B1711	ETACS-ECU internal error (RAM problem)	

Main Index
Group TOC

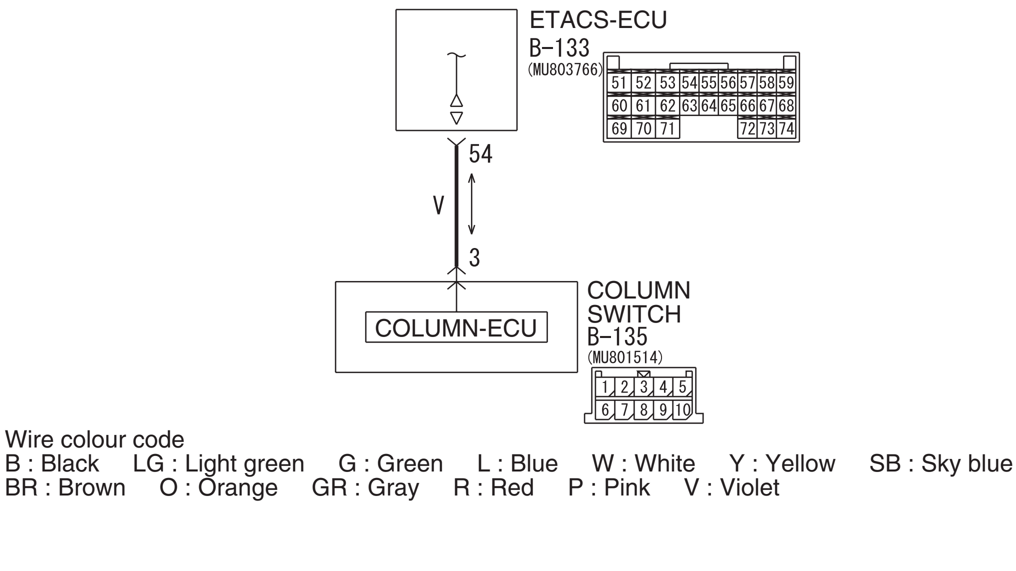
DIAGNOSIS TROUBLE CODE PROCEDURES

Diagnosis code No.U1700: Trouble in SWS communication line system

⚠ CAUTION

If diagnosis code No.u1700 is set in the ETACS-ECU, diagnose the CAN bus lines.

SWS Communication Line



TROUBLE JUDGMENT

The ETACS-ECU communicates with the column switch through the SWS communication line. If there is any trouble in the ETACS-ECU or the SWS communication lines, diagnosis code No.U1700 will be set.

COMMENT ON TROUBLE SYMPTOM

The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. M.U.T.-III CAN bus diagnostics

Use the M.U.T.-III to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : . Go to Step 2.

NO : . Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-13).

Step 2. Check whether the diagnosis code is reset.

Check again if the diagnosis code is set.

(1) Erase the diagnosis code.

(2) Ignition switch: LOCK (OFF) position to ON

(3) On completion, check that the diagnosis code is not reset.

Q: Is the check result normal?

YES : If a trouble is solved, it is determined that there is an intermittent malfunction such as poor engaged connector(s) or open circuit (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Go to Step 3.

Main Index
Group TOC

Step 3. ECU check by using the SWS monitor
Check that the SWS communication lines are in good condition.

- Ignition switch: OFF

ECU TO BE CHECKED

- COLUMN ECU
- ETACS ECU

OK: "OK" are displayed for all the items

Q: Are the check results normal?

Normal conditions are displayed for all the items. : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

"NG" is displayed on the "COLUMN ECU" menu. : Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-37."

"NG" is displayed on the "ETACS ECU" menu. : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Diagnosis code No.U1701 Communication error with column switch

⚠ **CAUTION**

If diagnosis code No.U1701 is set in the ETACS-ECU, diagnose the CAN bus lines.

TROUBLE JUDGMENT

The ETACS-ECU communicates with the column switch through the SWS communication lines. If there is any trouble in that communication, diagnosis code No.U1701 will be set.

COMMENT ON TROUBLE SYMPTOM

The column switch, the ETACS-ECU, connector(s), or wiring harness between the two may be defective.

POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. M.U.T.-III CAN bus diagnostics
Use the M.U.T.-III to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-13).

Step 2.Check whether the diagnosis code is reset.
Check again if the diagnosis code is set.

(1) Erase the diagnosis code.
(2) Ignition switch: LOCK (OFF) position to ON
(3) On completion, check that the diagnosis code is not reset.

Q: Is the check result normal?

YES : If a trouble is solved, it is determined that there is an intermittent malfunction such as poor engaged connector(s) or open circuit (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Go to Step 3.

Main Index
Group TOC

Step 3. ECU check by using the SWS monitor
Check that the power supply and earth lines to the ETACS-ECU and the column switch (column-ECU) and the SWS communication lines are normal.
- Ignition switch: OFF

ECU TO BE CHECKED
- COLUMN ECU
- ETACS ECU

OK: "OK" is displayed for all the items

Q: Are the check results normal?
Normal conditions are displayed for all the items. : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
"NG" is displayed on the "COLUMN ECU" menu. : Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-37."
"NG" is displayed on the "ETACS ECU" menu. : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Diagnosis code No.U1073: Bus off

⚠ CAUTION
If diagnosis code No.U1073 is set in the ETACS-ECU, diagnose the CAN bus lines.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

TROUBLE JUDGMENT

Diagnosis code No.U1073 will be stored when the ETACS-ECU ceases CAN communication (bus off) and then resumes the communication by turning the ignition switch to the "LOCK" (OFF) position.

COMMENTS ON TROUBLE SYMPTOM

The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or the SWS communication lines may be defective.

POSSIBLE CAUSES

Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. M.U.T.-III CAN bus diagnostics
Use the M.U.T.-III to diagnose the CAN bus lines.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-13). On completion, go to Step 3.

Step 2. Check whether the diagnosis code is reset.
Check again if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Ignition: LOCK (OFF) position to ON
(3) On completion, check that the diagnosis code is not reset.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Go to Step 3.

Step 3. ECU check by using the SWS monitor
Check that the SWS communication lines are in good condition.
- Ignition switch: ON

ECU TO BE CHECKED
- ETACS ECU

OK: "OK" is displayed on the "ETACS ECU" menu

Q: Is the check result normal?
YES : Replace the ETACS-ECU.
NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Main Index
Group TOC

Diagnosis code No.U1100: Engine-ECU <M/T> or Engine-CVT-ECU <CVT> time-out (related to engine)
Diagnosis code No.U1101: Engine-CVT-ECU time-out (related to CVT) <CVT>

⚠ CAUTION

- **If diagnosis code No.U1100 or No.U1101 are set in the ETACS, diagnose the CAN main bus line.**
- **Whenever the ECU is replaced, ensure that the communication circuit is normal.**

TROUBLE JUDGMENT

Diagnosis Code No.U1100

- The ETACS-ECU receives engine and transmission control signals from the engine-ECU <M/T> or engine-CVT-ECU <CVT> through the CAN bus lines. If the ECU can not receive the engine control system-related signal at all, diagnosis code No.U1100 will be set.

Diagnosis Code No.U1101

- The ETACS-ECU receives engine and transmission control signals from the engine-CVT-ECU through the CAN bus lines. If the ECU can not receive the transmission control system-related signal at all, diagnosis code No.U1101 will be set.

COMMENTS ON TROUBLE SYMPTOM

Current trouble

- Connector(s) or wiring harness in the CAN bus lines between the ETACS-ECU and the engine-ECU <M/T> or engine-CVT-ECU <CVT>, the power supply circuits to these ECUs, or the ETACS-ECU itself may be defective.

Past trouble

- If diagnosis code No.U1100 and No.U1101 are set as past trouble, carry out diagnosis with particular emphasis on wiring and connector(s) in the CAN bus lines between the ETACS-ECU and the engine-ECU <M/T> or engine-CVT-ECU <CVT>, or power supply to the engine-ECU <M/T> or engine-CVT-ECU <CVT>. For diagnosis procedures, refer to "How to treat past trouble" (refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points – How to Treat Past Trouble P.00-13).

NOTE: For a past trouble, you can not find it by the M.U.T.-III CAN bus diagnostics even if there is any failure in CAN bus lines. In this case, refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunctions P.00-13 and check the CAN bus lines. You can narrow down the possible cause of the trouble by referring to the diagnosis code, which is set regarding the CAN communication-linked ECUs (Refer to GROUP 54D – CAN Bus Line Diagnosis Flow P.54D-7).

PROBABLE CAUSES

- Malfunction of the engine-ECU <M/T>
- Malfunction of the engine-CVT-ECU <CVT>
- Malfunction of the ETACS-ECU
- Malfunction of the CAN bus

DIAGNOSIS PROCEDURE

Step 1. M.U.T.-III CAN bus diagnostics

Use the M.U.T.-III to diagnose the CAN bus lines.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-13). Repair the CAN bus line.

Step 2. M.U.T.-III other system diagnosis code

Check whether the engine-ECU <M/T> or engine-CVT-ECU <CVT> sets a diagnosis code.

Q: Is the check result normal?
YES : Diagnose the engine or the CVT (Refer to GROUP 13A – Troubleshooting P.13A-20 <4A9>, GROUP 13B – Troubleshooting P.13B-18 <4G1>, or GROUP 23A – Troubleshooting P.23A-14 <CVT>).
NO : Go to Step 3.

Step 3. M.U.T.-III other system diagnosis code

Check whether the combination meter-related diagnosis code is set.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Go to Step 5.

Main Index
Group TOC

Step 4. Check whether the diagnosis code is reset.

Recheck if the diagnosis code is set.

(1) Erase the diagnosis code.
(2) Turn the ignition switch to the "LOCK" (OFF) position to "ON" position.
(3) On completion, check that the diagnosis code is not reset.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the engine-ECU <M/T> or engine-CVT-ECU <CVT>.

Step 5. Check whether the diagnosis code is reset.

Recheck if the diagnosis code is set.

(1) Erase the diagnosis code.
(2) Turn the ignition switch "LOCK" (OFF) position to "ON" position.
(3) On completion, check that the diagnosis code is not reset.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

Diagnosis code No.U1102: ABS-ECU or ASC-ECU time-out

⚠ CAUTION

- **If diagnosis code No.U1102 is set in the ETACS-ECU, diagnose the CAN bus lines.**
- **Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

TROUBLE JUDGMENT

The ETACS-ECU receives ABS or ASC system-related signals from the ABS-ECU or ASC-ECU. If meter-related signal can not be received at all, diagnosis code No.U1102 will be set.

COMMENT ON TROUBLE SYMPTOM

Current trouble

- Connector(s) or wiring harness in the CAN bus lines between the ABS-ECU or ASC-ECU and the ETACS-ECU, the power supply system to the ABS-ECU or ASC-ECU, the ABS-ECU or ASC-ECU itself, or the ETACS-ECU may be defective.

Past trouble

- If diagnosis code No.U1102 are stored as a past trouble, carry out diagnosis with particular emphasis on wiring and connector(s) in the CAN bus line between the ABS-ECU or ASC-ECU and the ETACS-ECU, and the power supply system to the ABS-ECU or ASC-ECU. For diagnosis procedures, refer to "How to treat past trouble" (refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points – How to Treat Past Trouble P.00-13).

NOTE: For a past trouble, you can not find it by the M.U.T.-III CAN bus diagnostics even if there is any failure in CAN bus lines. In this case, refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunctions P.00-13 and check the CAN bus lines. You can narrow down the possible cause of the trouble by referring to the diagnosis code, which is set regarding the CAN communication-linked ECUs (Refer to GROUP 54D – CAN Bus Line Diagnosis Flow P.54D-7).

PROBABLE CAUSES

- Malfunction of the ABS-ECU
- Malfunction of the ASC-ECU
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. M.U.T.-III CAN bus diagnostics

Use the M.U.T.-III to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-13). On completion, go to Step 5.

Main Index
Group TOC

Step 2. M.U.T.-III other system diagnosis code

Check if a ABS-ECU or ASC-ECU diagnosis code is set.

Q: Is the diagnosis code set?

YES : Diagnose the ABS or ASC (Refer to GROUP 35B – Troubleshooting P.35B-7 <ABS> or GROUP 35C – Troubleshooting P.35C-6 <ASC>).

NO : Go to Step 3.

Step 3. M.U.T.-III other system diagnosis code

Check whether the combination meter sets ABS or ASC-related time-out diagnosis code.

Q: Is the diagnosis code set?

YES : Go to Step 4.

NO : Go to Step 5.

Step 4. Check whether the diagnosis code is reset

Recheck if the diagnosis code is set.

(1) Erase the diagnosis code.

(2) Turn the ignition switch to the "LOCK" (OFF) position to "ON" position.

(3) On completion, check that the diagnosis code is not reset.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ABS-ECU or ASC-ECU.

Step 5. Check whether the diagnosis code is reset

Recheck if the diagnosis code is set.

(1) Erase the diagnosis code.

(2) Turn the ignition switch to the "LOCK" (OFF) position to "ON" position.

(3) On completion, check that the diagnosis code is not reset.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

Diagnosis code No.U1110: Meter and A/C-ECU time-out (related to A/C)
Diagnosis code No.U1108: Meter and A/C-ECU time-out (related to meter)

⚠ CAUTION

- **If diagnosis code No.U1110 or No.U1108 are set in the ETACS-ECU, diagnose the CAN bus lines.**
- **Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

TROUBLE JUDGMENT

Diagnosis Code No.U1110

- The ETACS-ECU receives air conditioner system and meter-related signals from the combination meter (incorporating the meter and A/C-ECU). If air conditioner control system-related signal can not be received at all, diagnosis code No.U1110 will be set.

Diagnosis Code No.U1108

- The ETACS-ECU receives air conditioner system and meter-related signals from the combination meter (incorporating the meter and A/C-ECU). If meter-related signal can not be received at all, diagnosis code No.U1108 will be set.

COMMENT ON TROUBLE SYMPTOM

Current trouble

- Connector(s) or wiring harness in the CAN bus lines between the A/C-ECU and the ETACS-ECU, the power supply system to the combination meter, the combination meter itself, or the ETACS-ECU may be defective.

Past trouble

- If diagnosis code No.U1110 or No.U1108 are stored as a past trouble, carry out diagnosis with particular emphasis on wiring and connector(s) in the CAN bus line between the combination meter and the ETACS-ECU, and the power supply system to the combination meter. For diagnosis procedures, refer to "How to treat past trouble" (refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points – How to Treat Past Trouble P.00-13).

Main Index
Group TOC

NOTE: For a past trouble, you can not find it by the M.U.T.-III CAN bus diagnostics even if there is any failure in CAN bus lines. In this case, refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunctions P.00-13 and check the CAN bus lines. You can narrow down the possible cause of the trouble by referring to the diagnosis code, which is set regarding the CAN communication-linked ECUs (Refer to GROUP 54D – CAN Bus Line Diagnosis Flow P.54D-7).

PROBABLE CAUSES

- Malfunction of the combination meter (incorporating the meter and A/C-ECU)
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. M.U.T.-III CAN bus diagnostics

Use the M.U.T.-III to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-13). On completion, go to Step 5.

Step 2. M.U.T.-III other system diagnosis code

Check if a combination meter diagnosis code is set.

Q: Is the diagnosis code set?

YES : Diagnose the combination meter (Refer to GROUP 54A – Troubleshooting P.54A-31).
NO : Go to Step 3.

Step 3. M.U.T.-III other system diagnosis code

Check whether the engine-ECU <M/T> or engine-CVT-ECU <CVT> sets meter and air-conditioner-related time-out diagnosis code.

Q: Is the check result normal?

YES : Go to Step 4.
NO : Go to Step 5.

Step 4. Check whether the diagnosis code is reset

Recheck if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Turn the ignition switch to the "LOCK" (OFF) position to "ON" position.
(3) On completion, check that the diagnosis code is not reset.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Replace the combination meter (incorporating the meter and A/C-ECU).

Step 5. Check whether the diagnosis code is reset

Recheck if the diagnosis code is set.
(1) Erase the diagnosis code.
(2) Turn the ignition switch to the "LOCK" (OFF) position to "ON" position.
(3) On completion, check that the diagnosis code is not reset.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Replace the ETACS-ECU.

Main Index
Group TOC

Diagnosis code No.U1128: Meter and A/C-ECU failure information (related to meter)

⚠ CAUTION

- **If diagnosis code No.U1128 is set in the ETACS-ECU, diagnose the CAN bus lines.**
- **Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

TROUBLE JUDGMENT

The ETACS-ECU receives combination meter-related signal from the combination meter via the CAN bus lines. If a fail-safe related data is contained in the signal from the combination meter, diagnosis code No.U1128 will be stored.

COMMENT ON TROUBLE SYMPTOM

Current trouble

- Connector(s) or wiring harness in the CAN bus lines, the engine-ECU <M/T> or engine-CVT-ECU <CVT>, the combination meter or the ETACS-ECU may be defective.

Past trouble

- If diagnosis code No.U1128 is stored as a past trouble, carry out diagnosis with particular emphasis on wiring and connector(s) in the CAN bus line between the combination meter and the ETACS-ECU, and the power supply system to the combination meter. For diagnosis procedures, refer to "How to treat past trouble" (refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points – How to Treat Past Trouble P.00-13).

NOTE: For a past trouble, you can not find it by the M.U.T.-III CAN bus diagnostics even if there is any failure in CAN bus lines. In this case, refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunctions P.00-13 and check the CAN bus lines. You can narrow down the possible cause of the trouble by referring to the diagnosis code, which is set regarding the CAN communication-linked ECUs (Refer to GROUP 54D – CAN Bus Line Diagnosis Flow P.54D-7).

PROBABLE CAUSES

- Malfunction of the engine-ECU <M/T>
- Malfunction of the engine-CVT-ECU <CVT>
- Defective combination meter
- Malfunction of the ETACS-ECU

DIAGNOSIS PROCEDURE

Step 1. M.U.T.-III CAN bus diagnostics

Use the M.U.T.-III to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-13).

Step 2. M.U.T.-III other system diagnosis code

Check whether the engine-ECU <M/T> or engine-CVT-ECU <CVT> sets a diagnosis code.

Q: Is the diagnosis code set?

YES : Diagnose the engine or the CVT (Refer to GROUP 13A – Troubleshooting P.13A-20 <4A9>, GROUP 13B – Troubleshooting P.13B-18 <4G1>, or GROUP 23A – Troubleshooting P.23A-14 <CVT>).
NO : Go to Step 3.

Step 3. M.U.T.-III other system diagnosis code

Check whether the combination meter-related diagnosis code is set.

Q: Is the diagnosis code set?

YES : Diagnose the combination meter (Refer to GROUP 54A – Troubleshooting P.54A-31).
NO : Go to Step 4.

Step 4. Check whether the diagnosis code is reset

Check again if the diagnosis code is set.

(1) Erase the diagnosis code.
(2) Turn the ignition switch to the "LOCK" (OFF) position to "ON" position.
(3) On completion, check that the diagnosis code is not reset.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Replace the ETACS-ECU.

Main Index
Group TOC

Diagnosis code No.B1706: Blown fuse is detected in fuse No.31 (hazard fuse).

⚠ **CAUTION**

- **If diagnosis code No.B1706 is set in the ETACS-ECU, diagnose the CAN bus lines.**
- **Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

TROUBLE JUDGMENT

When junction block fuse No.31 is blown, diagnosis diagnosis code No.B1706 is set. However, if the system returns to normal condition, diagnosis code No.B1706 will be erased automatically.

COMMENT ON TROUBLE SYMPTOM

Junction block fuse No.31 or the ETACS-ECU may be defective.

PROBABLE CAUSES

- Malfunction of the Junction block fuse No. 31
- Damaged harness wires and connectors
- Malfunction of the ETACS-ECU

DIAGNOSIS PROCEDURE

Step 1. M.U.T.-III CAN bus diagnostics

Use the M.U.T.-III to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-13).

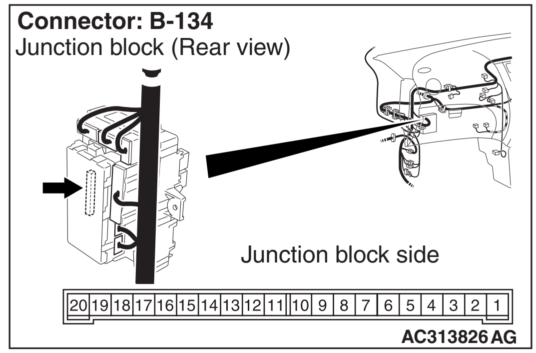
Step 2. Check the Junction block fuse No.31

Q: Is the fuse in good condition?

YES : Go to Step 3.

NO : Replace the Junction block fuse No.31, and then go to Step 6.

Step 3. Connector check: B-134 ETACS-ECU connector

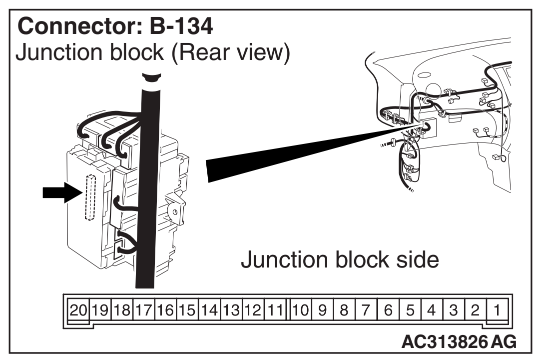


Q: Is the check result normal?

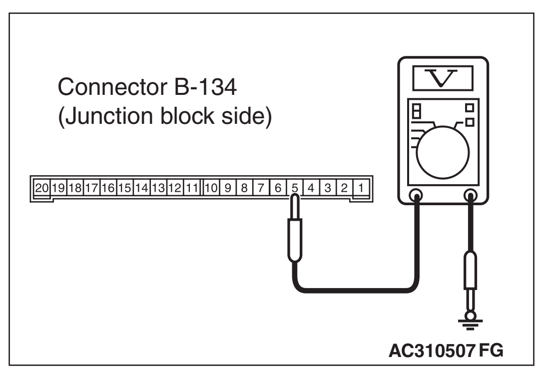
YES : Go to Step 4.

NO : Repair the defective connector.

Step 4. Voltage measurement at the B-134 ETACS-ECU connector



(1) Disconnect the connector, and measure at the wiring harness side.



(2) Voltage between B-134 ETACS-ECU connector terminal No. 5 and body earth

OK: System voltage

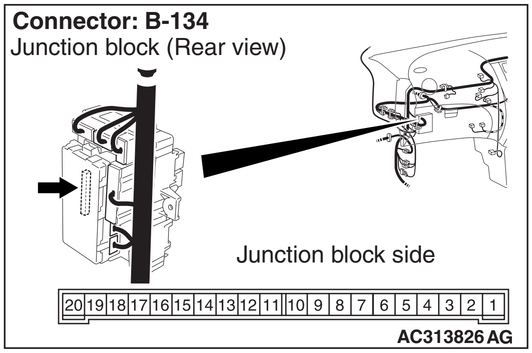
Q: Is the check result normal?

YES : Go to Step 6.

NO : Go to Step 5.

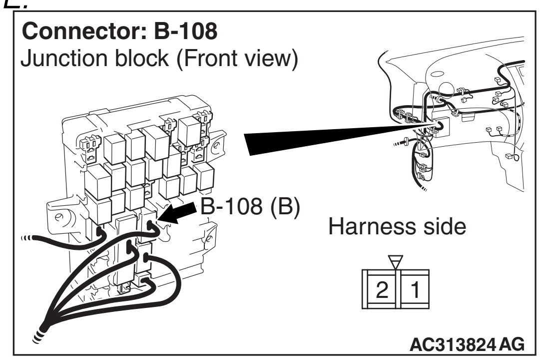
Main Index
Group TOC

Step 5. Check the wiring harness between B-134ETACS-ECU connector terminal No. 1 to fusible link (1).



Check the power supply line for open circuit.

NOTE:



Prior to the wiring harness inspection, check junction block connector B-108 and repair if necessary.

Q: Is the check result normal?

YES : . The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : . Repair the wiring harness.

Step 6. Check whether the diagnosis code is reset.

Recheck if the diagnosis code is set.

(1) Erase the diagnosis code.
(2) Turn the ignition switch to the "LOCK" (OFF) position to "ON" position.
(3) Check if the diagnosis code is set.

Q: Is the check result satisfactory?

YES : If a trouble is solved, it is determined that there is an intermittent malfunction such as poor engaged connector(s) or open circuit (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

Diagnosis code No. B1707: Open circuit is detected in the flasher circuit.

⚠ CAUTION

- **If diagnosis code No.B1707 are set in the ETACS, diagnose the CAN main bus line.**
- **Whenever the ECU is replaced, ensure that the communication circuit is normal.**

TROUBLE JUDGMENT

When there is an open circuit between the turn-signal lamp relay (incorporated in the ETACS-ECU) and body earth, diagnosis code No. B1707 is set. However, if the system returns to normal condition, diagnosis code No.B1707 will be erased automatically.

COMMENTS ON TROUBLE SYMPTOM

The wiring harness wire or connectors between the turn-signal lamp relay and body earth may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or the ETACS-ECU may be defective.

PROBABLE CAUSES

- Defective turn-signal lamp bulb
- Defective head lamp assembly
- Defective side turn-signal lamp
- Defective rear combination lamp
- Damaged harness wires and connectors
- Malfunction of the ETACS-ECU

Main Index
Group TOC

DIAGNOSIS PROCEDURE

Step 1. M.U.T.-III CAN bus diagnostics

Use the M.U.T.-III to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to step 2.

NO : Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-13). Repair the CAN bus line.

Step 2. ECU check by using the SWS monitor.

Check that the SWS communication lines are in good condition.

- Ignition switch: ON

ECU TO BE CHECKED

- ETACS ECU

OK: "OK" is displayed on the "ETACS ECU" menu

Q: Is the check result normal?

YES : Go to Step 3.

NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Step 3. M.U.T.-III actuator test

Perform the actuator test for the ETACS-ECU, and check that the turn-signal lamps work. Refer to P.54C-14.

- Item 09: Turn-signal lamp (LH) switch
- Item 10: Turn-signal lamp (RH) switch
- Item 17: Turn-signal lamp (LH)
- Item 18: Turn-signal lamp (RH)

OK: The turn-signal lamps blink or illuminate.

Q: Is the check result normal?

YES : Go to Step 4.

NO : Refer to Inspection Procedure L-3 "Any of the turn-signal lamps does not illuminate P.54C-175."

Step 4. Check that the turn-signal lamps operate.

Check that the turn-signal lamps illuminate normally.

Q: Is the check result normal?

YES : Go to step 5.

NO : Refer to Inspection Procedure L-3 "Any of the turn-signal lamps does not illuminate P.54C-175."

Step 5. Check whether the diagnosis code is reset.

Recheck if the diagnosis code is set.

(1) Erase the diagnosis code.
(2) Turn the ignition switch to the "LOCK" (OFF) position to "ON" position.
(3) On completion, check that the diagnosis code is not reset.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

Main Index
Group TOC

Diagnosis code No. B1708: An open circuit is detected in the variable intermittent wiper control switch.

⚠ CAUTION

- **If diagnosis code No.B1708 is set in the ETACS, diagnose the CAN main bus line.**
- **Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

TROUBLE JUDGMENT

When the output voltage of the variable intermittent wiper control switch is 4V or more for 1 second or more, ETACS-ECU judges that there is an open circuit in the variable intermittent wiper control switch, and sets diagnosis code No. B1708.

COMMENTS ON TROUBLE SYMPTOM

Current trouble

- The SWS communication line, the column switch or the ETACS-ECU may be defective.

Past trouble

- Carry out diagnosis with particular emphasis on connector(s) or wiring harness between the ETACS-ECU and the column switch. For diagnosis procedures, refer to "How to treat past trouble" (Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points P.00-13).

PROBABLE CAUSES

- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. M.U.T.-III CAN bus diagnostics

Use the M.U.T.-III to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to step 3.

NO : Repair the CAN bus line (Refer to GROUP 54D, Troubleshooting P.54D-13). On completion, go to Step 2.

Step 2. Retest the system.

Check that the windshield intermittent wiper interval can be adjusted by operating the windshield intermittent wiper volume control.

OK: The intermittent wiper interval is changed as the intermittent wiper volume is rotated.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Refer to Inspection Procedure N-6 "The windshield wiper volume signal is not received P.54C-211."

Step 3. Check whether the diagnosis code is reset.

Recheck if the diagnosis code is set.

(1) Erase the diagnosis code.
(2) Turn the ignition switch to the "LOCK" (OFF) position to "ON" position.
(3) On completion, check that the diagnosis code is not reset.

Q: Is the check result normal?

YES : Replace the ETACS-ECU.

NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

Main Index
Group TOC

Diagnosis code No. B1709: ETACS-ECU Internal Error (EEPROM Problem)
Diagnosis code No. B1710: ETACS-ECU Internal Error (ROM Problem)
Diagnosis code No. B1711: ETACS-ECU Internal Error (RAM Problem)

⚠ **CAUTION**
- **If diagnosis code No.B1709, B1710 or B1711 are set in the ETACS-ECU, diagnose the CAN bus lines.**
- **Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.**

TROUBLE JUDGMENT

If there is any trouble in the ETACS-ECU, diagnosis code No. B1709, B1710, B1711 will be set.

COMMENT ON TROUBLE SYMPTOM

The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or the ETACS-ECU may be defective.

PROBABLE CAUSES

- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. M.U.T.-III CAN bus diagnostics

Use the M.U.T.-III to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-13).

Step 2. ECU check by using the SWS monitor.

Check that the SWS communication lines are in good condition.

- Ignition switch: ON

ECU TO BE CHECKED

- ETACS ECU

OK: "OK" is displayed on the "ETACS ECU" menu

Q: Is the check result normal?

YES : Go to Step 3.

NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Step 3. Check whether the diagnosis code is reset.

Recheck if the diagnosis code is set.

(1) Erase the diagnosis code.
(2) Turn the ignition switch to the "LOCK" (OFF) position to "ON" position.
(3) On completion, check that the diagnosis code is not reset.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

Main Index
Group TOC

TROUBLE SYMPTOM CHART

M1549000802293

<ECU COMMUNICATION SYSTEM>

Symptom	Inspection procedure number	Reference page
Communication with the SWS monitor is not possible.	A-1	P.54C-34
Communication with the column switch (column-ECU) is not possible.	A-2	P.54C-37
Communication with the ETACS-ECU is not possible.	A-3	P.54C-41

<FUNCTION SYSTEM>

Symptom		Inspection procedure number	Reference page
Alarm Function	Lamp reminder buzzer function does not work normally.	B-1	P.54C-45
	Door-ajar warning buzzer function does not work.	B-2	P.54C-47
	Turn-signal lamp operation sound function does not work normally.	B-3	P.54C-49
Central door locking	Central door locking system does not work.	C-1	P.54C-51
	A door can not be locked or unlocked by the central door locking system.	C-2	P.54C-54
	selector "P" position-linked door unlock function does not operate normally. <CVT>	C-3	P.54C-61
Power window	Power windows do not work at all.	D-1	P.54C-62
	Driver's power window does not work by means of the power window main switch.	D-2	P.54C-68
	Relevant power window(s) do not work by means of the front and rear power window sub switches.	D-3	P.54C-71
	Passenger's and/or rear power window(s) do not work by means of the power window main switch.	D-4	P.54C-80
	The power window timer function does not work normally.	D-5	P.54C-82
	The window glass lowers automatically while it is rising.	D-6	P.54C-83

Main Index
Group TOC

Symptom		Inspection procedure number	Reference page
Keyless entry system	Keyless entry system does not work.	E-1	P.54C-84
	Keyless entry hazard lamp answerback function or the room lamp answerback function does not work normally.	E-2	P.54C-85
	Encrypted code cannot be registered.	E-3	P.54C-87
	Multi-mode keyless entry system function does not work at all.	E-4	P.54C-88
	The timer lock function does not work after the doors have been unlocked by the keyless entry system.	E-5	P.54C-90
Windshield wiper and washer	The windshield wipers do not work at all.	F-1	P.54C-91
	The windshield wipers do not work when the wiper switch is at "INT", "WASHER" or "MIST" position. However, the wipers work at low speed when the switch is at "LO" and "HI" position.	F-2	P.54C-95
	The windshield wipers do not stop at the specified park position.	F-3	P.54C-97
	The windshield wipers do not work normally.	F-4	P.54C-100
	The intermittent wiper interval cannot be adjusted by operating the windshield intermittent wiper volume control.	F-5	P.54C-104
	The intermittent wiper interval is not changed according to the vehicle speed.	F-6	P.54C-105
	The windshield washer does not work.	F-7	P.54C-107
Rear wiper and washer	The rear wiper does no not work at all.	G-1	P.54C-110
	The rear wiper does not stop at the specified park position.	G-2	P.54C-114
	When the shift lever is moved to "R" position during the rear wiper operation, the rear wiper does not operate at the continuous mode. <CVT>	G-3	P.54C-118
	The rear washer does not work.	G-4	P.54C-119
Electric retractable remote controlled door mirror	Electric retractable remote controlled door mirror does not work at all.	H-1	P.54C-122
	Electric retractable remote controlled door mirror timer function does not at all.	H-2	P.54C-126
	Vehicle speed-dependent unfolding function does not work normally.	H-3	P.54C-127
	Keyless entry system-linked fold/unfold function does not work normally.	H-4	P.54C-127
	Left or right side electric retractable remote controlled door mirror does not work at all.	H-5	P.54C-128

Main Index
Group TOC

Symptom		Inspection procedure number	Reference page
Ignition key cylinder illumination lamp	The ignition key cylinder illumination lamp does not illuminate/extinguish normally.	I-1	P.54C-133
Headlamp and tail lamp	The tail lamps do not illuminate normally.	J-1	P.54C-137
	The low-beam headlamps do not illuminate normally.	J-2	P.54C-140
	The high-beam headlamps do not illuminate normally.	J-3	P.54C-143
	The high-beam and low-beam headlamps do not illuminate when the passing switch is operated.	J-4	P.54C-146
	The headlamp(s) do not illuminate.	J-5	P.54C-147
	The high-beam indicator lamps does not illuminate.	J-6	P.54C-152
	Any of tail lamps, position lamps or licence plate lamp does not illuminate	J-7	P.54C-154
	The headlamps do not illuminate when the lighting switch is at "TAIL" or "PASSING" position, but illuminate only at low beam when the switch is at "HEAD" position. However, the headlamps do not illuminate at high beam.	J-8	P.54C-160
Fog lamp	The fog lamps do not illuminate normally	K-1	P.54C-161
	Any of the fog lamps does not illuminate.	K-2	P.54C-165
	The fog lamps indicator does not illuminate normally	K-3	P.54C-168
Flasher timer	The turn-signal lamps do not illuminate	L-1	P.54C-170
	The hazard warning lamps do not illuminate.	L-2	P.54C-173
	Any of the turn-signal lamps does not illuminate.	L-3	P.54C-175
	The turn-signal indicator lamp does not illuminate.	L-4	P.54C-184
	The turn-signal lamps do not illuminate when the ignition switch is at the ACC position.	L-5	P.54C-185
Interior lamp	The interior lamps (room ramp, luggage compartment lamp) does not illuminate or extinguish normally.	M-1	P.54C-186
	The room lamp does not illuminate normally.	M-2	P.54C-191
	The luggage compartment lamp does not illuminate normally.	M-3	P.54C-195
	The door-ajar warning lamp does not illuminate/extinguish normally	M-4	P.54C-199

CHECK TROUBLE BY USING THE INPUT SIGNAL CHECK

M1549024200608

<Data list, function diagnosis or pulse check>

If a problem is found in the Service Data or Pulse Check inspection, observe the table below.

Symptom		Inspection procedure number	Reference page
The ignition switch (ACC) signal is not received.		N-1	P.54C-201
The ignition switch (IG1) signal is not received.		N-2	P.54C-203
The driver's door switch signal is not received.		N-3	P.54C-205
Column switch (lighting and turn-signal lamp switch)	The tail lamp switch signal is not received.	N-4	P.54C-208
	The headlamp switch signal is not received.		
	The auto lamp switch signal is not received.		
	The dimmer switch signal is not received.		
	The passing switch signal is not received.		
	The turn-signal lamp switch (LH) signal is not received.		
	The turn-signal lamp switch (RH) signal is not received.		
Column switch (windshield wiper/washer and rear wiper/washer switch)	The windshield mist wiper switch signal is not received.	N-5	P.54C-210
	The windshield intermittent wiper switch signal is not received.		
	The windshield low-speed wiper switch signal is not received.		
	The windshield high-speed wiper switch signal is not received.		
	The windshield washer switch signal is not received.		
	The rear wiper switch signal is not received.		
	The rear washer switch signal is not received.		
	The windshield intermittent wiper volume signal is not received.	N-6	P.54C-211
The key reminder switch signal is not received.		N-7	P.54C-213
Signal is not received from the remote controlled mirror switch (folding/unfolding switch).		N-8	P.54C-216
The hazard warning lamp switch signal is not received.		N-9	P.54C-219
All the door switch signals are not received.		N-10	P.54C-222
The driver's door lock actuator switch signal is not received.		N-11	P.54C-226

Main Index
Group TOC

Symptom	Inspection procedure number	Reference page
Each switch signal of the keyless entry transmitter is not received.	N-12	P.54C-229
The fog lamp switch signal is not received.	N-13	P.54C-231
The passenger's door switch signal is not received.	N-14	P.54C-234

OPERATION AND FUNCTION QUICK-REFERENCE TABLE FOR INPUT SIGNAL INSPECTION PROCEDURES

M1549020300517

If troubles have occurred in the functions which use the SWS simultaneously, observe the table below to check input signals.

(This table shows only the input signals which will cause troubles in at least two functions simultaneously).

Function	N-1	N-2	N-3	N-4	N-5	N-7	N-10	N-11	N-12
Lamp reminder buzzer function	–	×	×	×	–	–	–	–	–
Door-ajar buzzer function	–	–	–	–	–	–	×	–	–
Turn-signal lamp operation sound function	–	–	×	–	–	–	–	–	–
Central door lock control	–	–	–	–	–	–	–	×	–
Keyless entry system	–	–	×	–	–	×	×	–	×
Keyless entry hazard answerback function	–	×	–	–	–	–	–	–	×
Multi-mode keyless entry	–	–	–	–	–	–	–	–	×
Power window timer function	–	×	×	–	–	–	–	–	–
Control of windshield wiper washer	×	–	–	–	×	–	–	–	–
Rear wiper washer control	×	–	–	–	×	–	–	–	–
Control of electric folding remote-controlled mirror	–	×	–	–	–	–	–	–	–
Ignition key cylinder illumination lamp function	–	×	×	–	–	×	–	–	
Headlamp control	–	–	–	×	–	–	–	–	–
Tail lamp control	–	–	–	×	–	–	–	–	–
Fog lamp control	–	–	–	×	–	–	–	–	–
Turn-signal lamp control	–	×	–	×	–	–	–	–	–
Room lamp control	–	×	–	–	–	×	×	×	–
Door-ajar indicator lamp	–	–	×	–	–	–	×	–	–

Main Index
Group TOC

SYMPTOM PROCEDURES

INSPECTION PROCEDURE A-1: Communication with the SWS monitor is not possible.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

The SWS monitor may be connected improperly.

POSSIBLE CAUSES

- Malfunction of the SWS monitor body (I/F cartridge)
- Malfunction of the SWS monitor harness
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check that the M.U.T.-III communicates with the other systems.

Check whether the M.U.T.-III can communicate with the other systems.

Q: Is the check result normal?

YES : Go to Step 2.
NO : Diagnose the system, which cannot communicate with the M.U.T.-III.

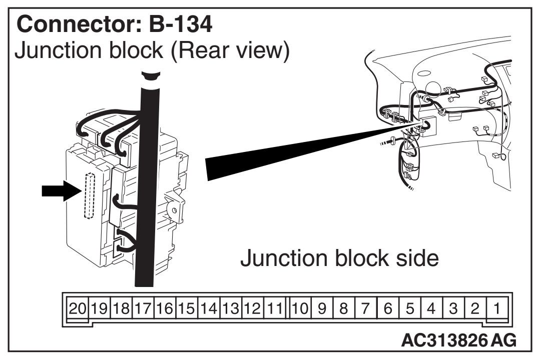
Step 2. Check that the M.U.T.-III can communicate with the system.

When the ignition switch is turned ON, check if the M.U.T.-III can communicate with the system.

Q: Is the check result normal?

YES : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."
NO : Go to Step 3.

Step 3. Connector check: B-134 ETACS-ECU connector

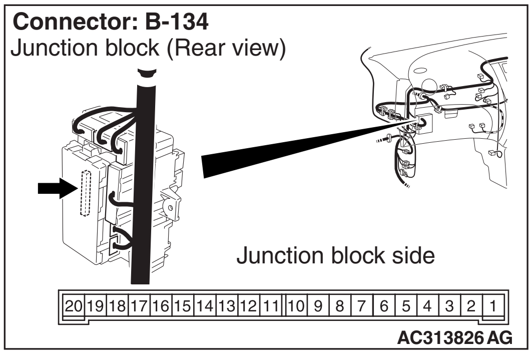


Q: Is the check result normal?

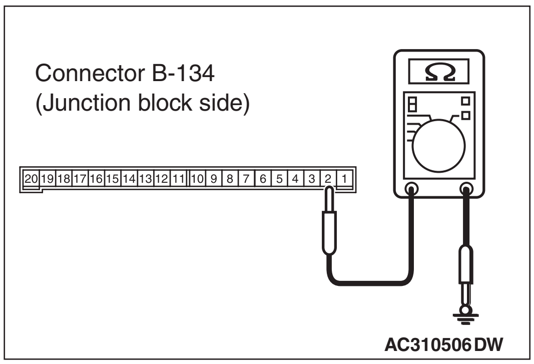
YES : Go to Step 4.
NO : Repair the defective connector.

Main Index
Group TOC

Step 4. Resistance measurement at the B-134 ETACS-ECU connector.



(1) Disconnect the connector, and measure at the junction block side.



(2) Resistance between B-134 ETACS-ECU connector terminal No.2 and body earth.

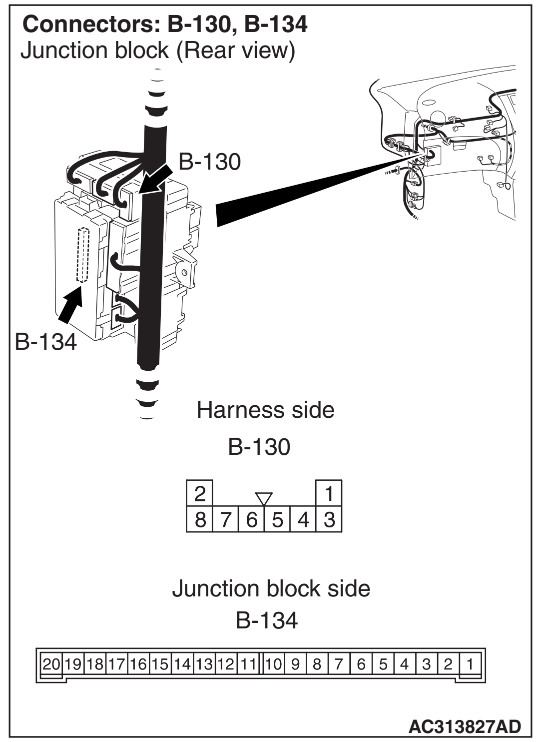
OK: Continuity exists (2 Ω or less)

Q: Is the check result normal?

YES : Go to Step 6.

NO : Go to Step 5.

Step 5. Check the wiring harness between B-134 ETACS-ECU connector terminal No.2 to body earth.



NOTE: Prior to the wiring harness inspection, check junction block connectors B-130, and repair if necessary.

- Check the earth wires for open circuit.

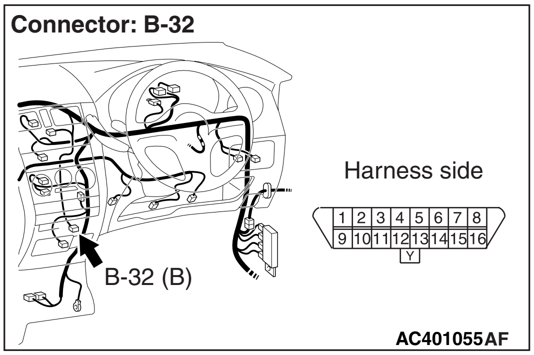
Q: Is the check result normal?

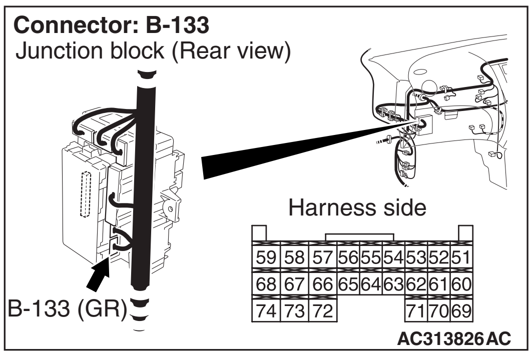
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Main Index
Group TOC

Step 6. Connector check: B-32 diagnosis connector, B-133 ETACS-ECU connector



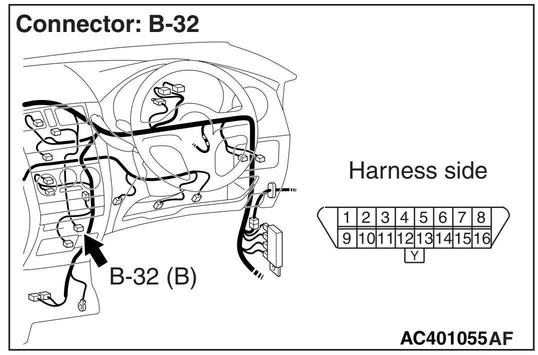


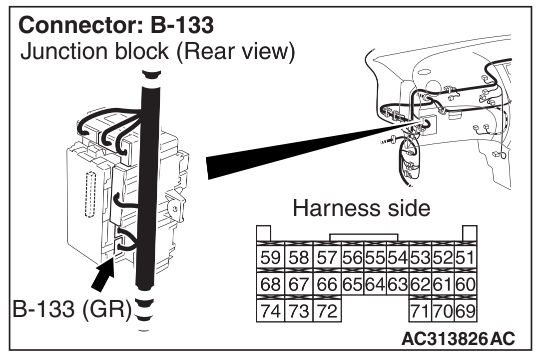
Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the defective connector.

Step 7. Check the wiring harness from B-133 ETACS-ECU connector terminal Nos. 52 and 69 to B-32 diagnosis connector terminal Nos. 9 and 1.





Q: Is the check result normal?

YES : Go to Step 8.

NO : Repair the wiring harness.

Step 8. Retest the system.

Check that the ETACS-ECU communicates with the SWS monitor.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

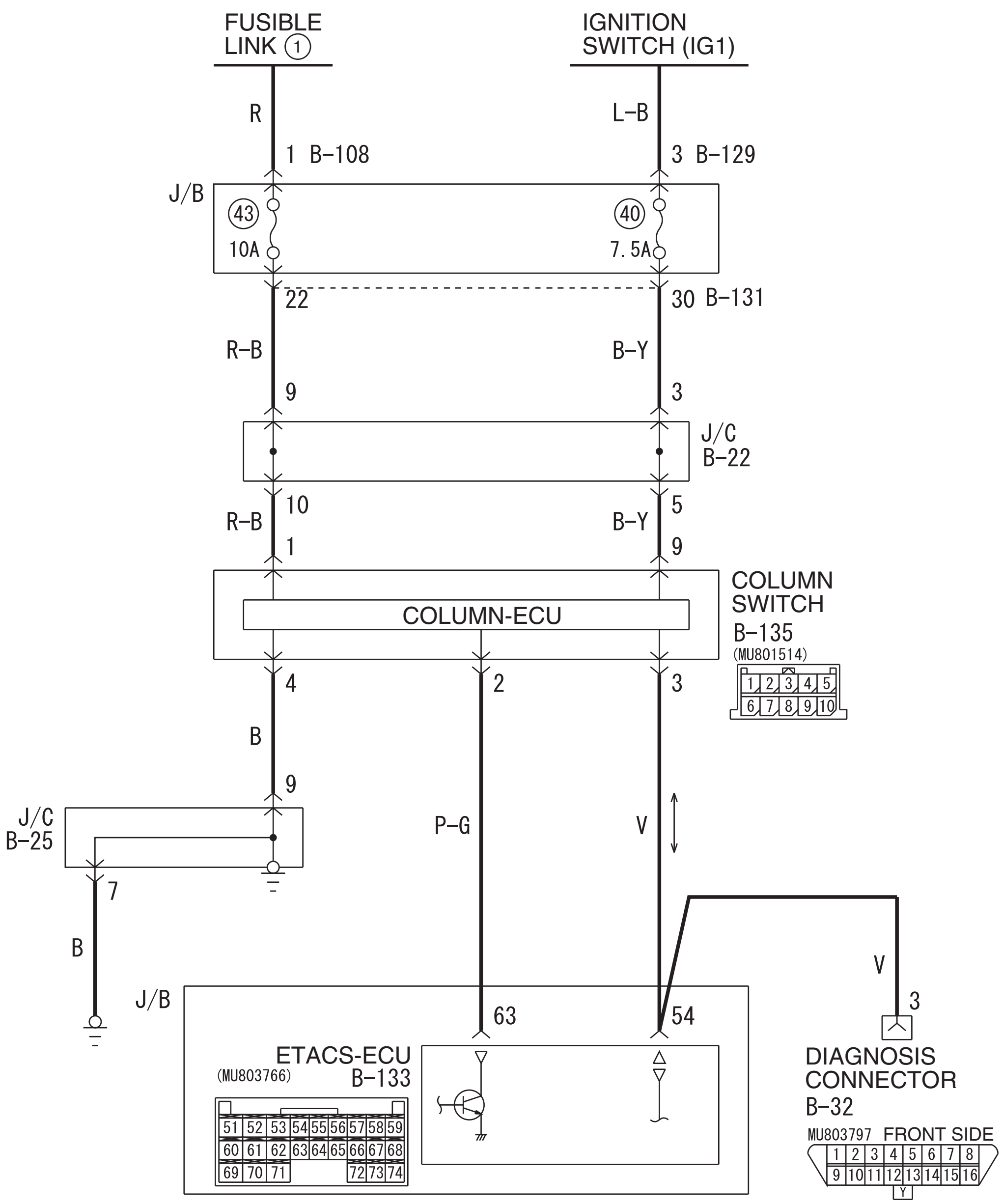
Main Index
Group TOC

INSPECTION PROCEDURE A-2: Communication with the column switch (column-ECU) is not possible.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Column Switch Power Supply and SWS Communication Circuit



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Grey R : Red P : Pink V : Violet PU : Purple

W6N54L001A

Main Index
Group TOC

COMMENTS ON TROUBLE SYMPTOM

The power supply circuit to the column switch (column-ECU) may be defective. If the wiring harness of the battery power supply circuit for the ECU (column switch terminal No.1) is defective, also check the power supply circuit to the ignition switch (IG1) (column switch terminal No.9) and repair if necessary.

TROUBLESHOOTING HINTS

- Malfunction of the ETACS-ECU
- Malfunction of the column switch
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. ECU check by using the SWS monitor

Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

ECU TO BE CHECKED

- ETACS ECU

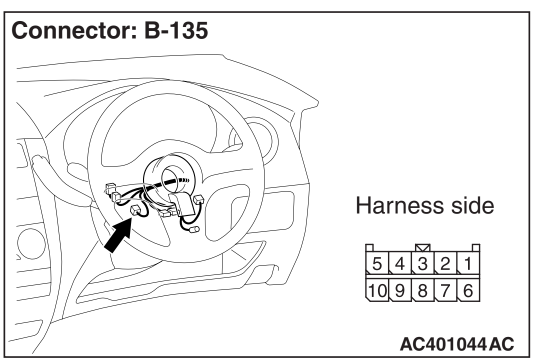
OK: "OK" is displayed on the "ETACS ECU" menu.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Step 2. Connector check: B-135 column switch connector

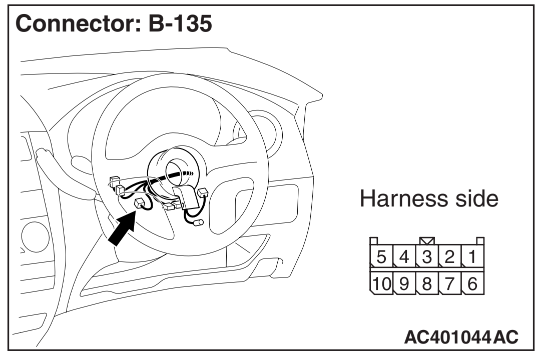


Q: Is the check result normal?

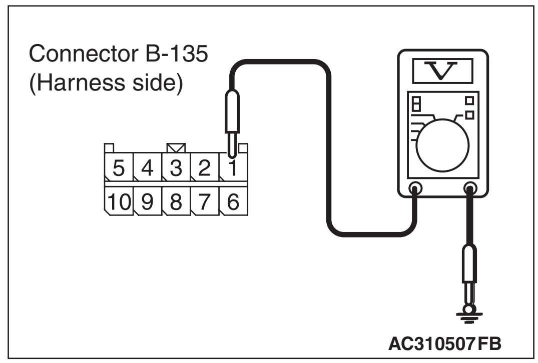
YES : Go to Step 3.

NO : Repair the defective connector.

Step 3. Voltage measurement at the B-135 column switch connector.



(1) Disconnect the connector, and measure at the wiring harness side.



(2) Voltage between B-135 column switch connector No.1 and body earth

OK: System voltage

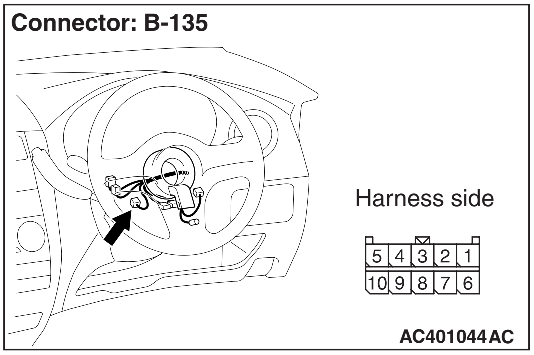
Q: Is the check result normal?

YES : Go to Step 5.

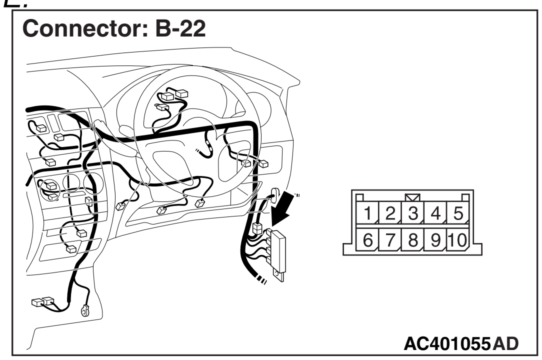
NO : Go to Step 4.

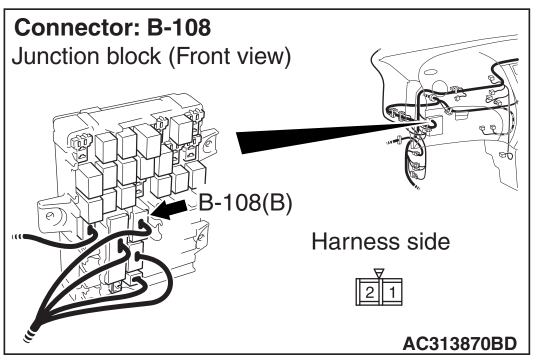
Main Index
Group TOC

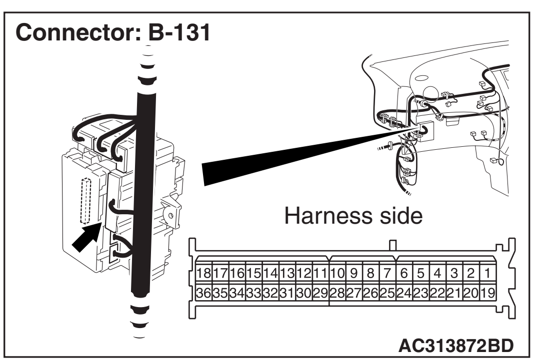
Step 4. Check the wiring harness between B-135 column switch connector terminal No.1 to fusible link (1).



NOTE:







Prior to the wiring harness inspection, check junction block connectors B-108, B-131 and joint connector B-22, and repair if necessary.

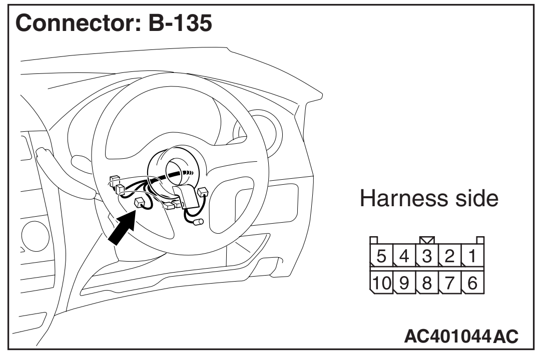
- Check the power supply line for open circuit.

Q: Is the check result normal?

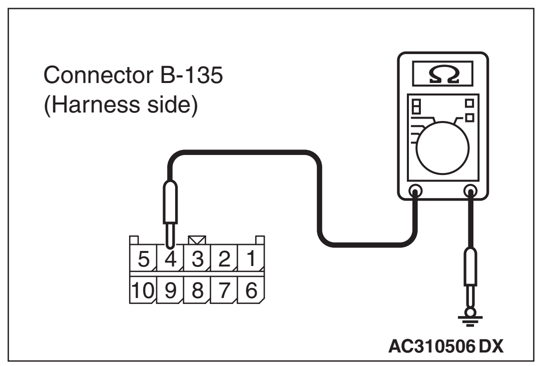
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 5. Resistance measurement at the B-135 column switch connector.



(1) Disconnect the connector, and measure at the wiring harness side.



(2) Continuity between B-135 column switch connector No.4 and body earth

OK: Continuity exists (2 Ω or less)

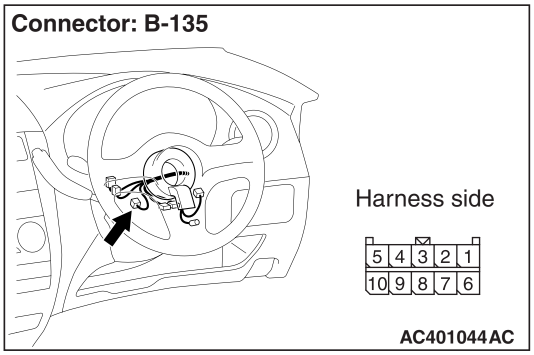
Q: Is the check result normal?

YES : Go to Step 7.

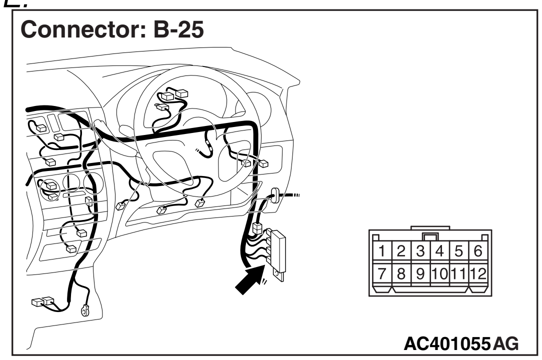
NO : Go to Step 6.

Main Index
Group TOC

Step 6. Check the wiring harness between B-135 column switch connector No.4 to body earth.



NOTE:



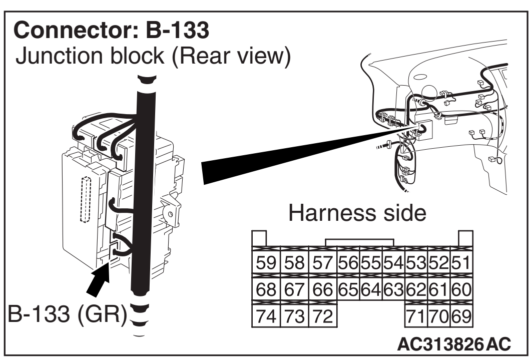
Prior to the wiring harness inspection, check joint connector B-25, and repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?

YES : Go to Step 10.
NO : Repair the wiring harness.

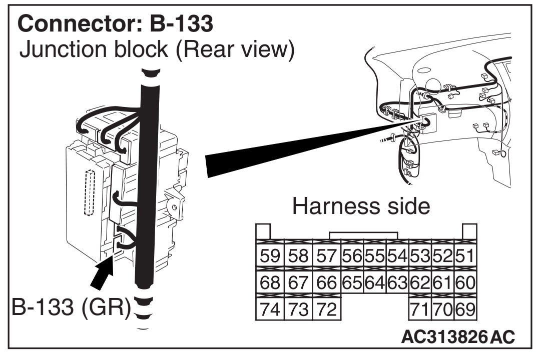
Step 7. Connector check: B-133 ETACS-ECU connector

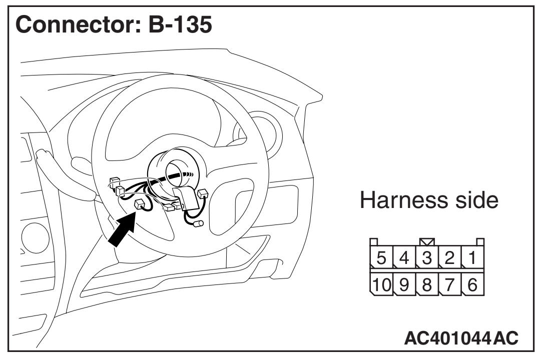


Q: Is the check result normal?

YES : Go to Step 8.
NO : Repair the defective connector.

Step 8. Check the wiring harness from B-133 ETACS-ECU connector terminal Nos. 54, 60 and 63 to B-135 column switch connector terminal Nos. 3, 10 and 2.





- Check the communication lines for open circuit.

Q: Is the check result normal?

YES : Go to Step 9.
NO : Repair the wiring harness.

Step 9. ECU check by using the SWS monitor

- Ignition switch: OFF

ECU TO BE CHECKED

- COLUMN ECU

OK: "OK" is displayed on the "COLUMN ECU" menu.

Q: Is the check result normal?

YES : Go to Step 10.
NO : Replace the column switch.

Step 10. Retest the system.

Check that the ETACS-ECU communicates with the column switch.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Replace the ETACS-ECU.

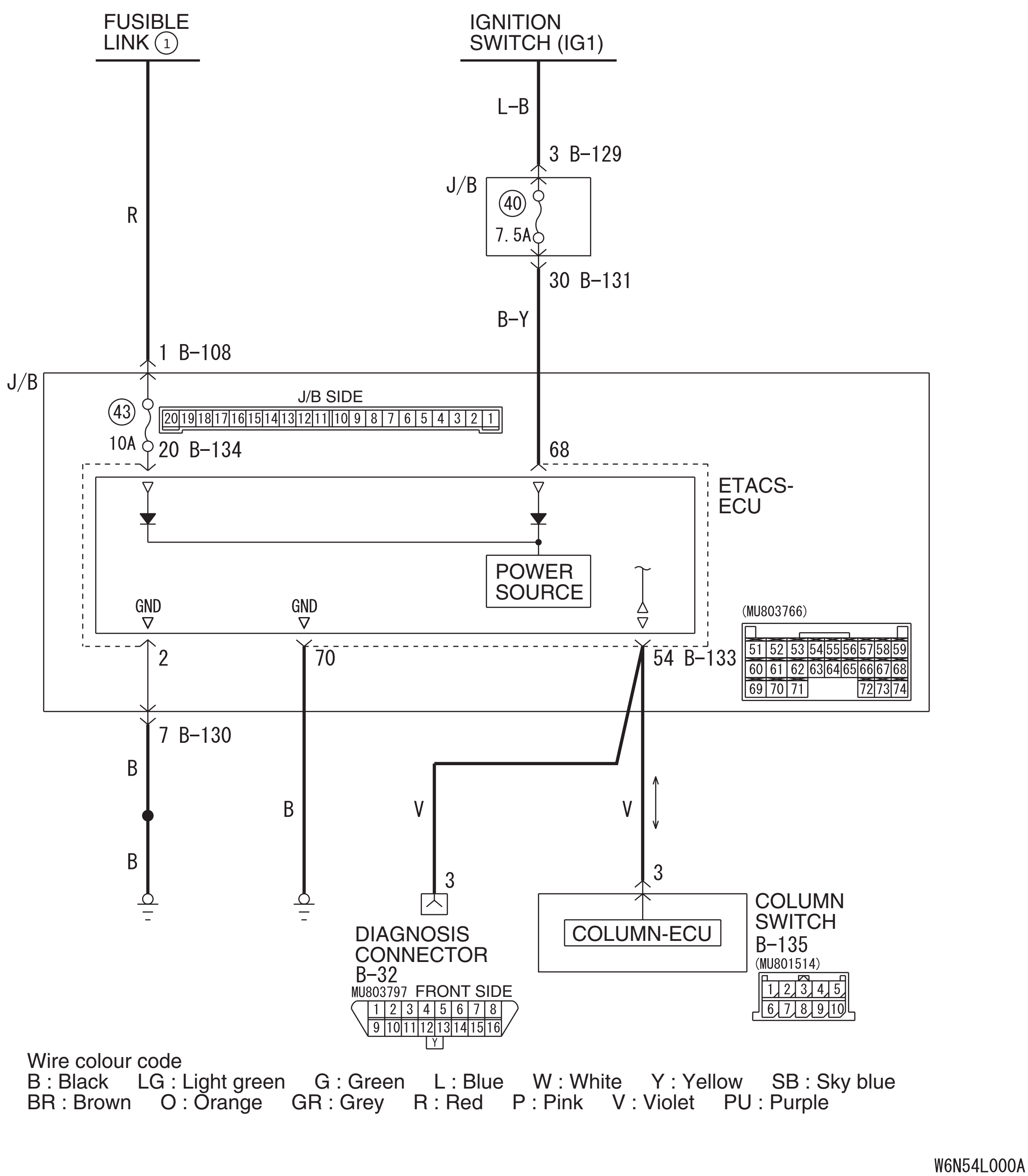
Main Index
Group TOC

INSPECTION PROCEDURE A-3: Communication with the ETACS-ECU is not possible.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

ETACS-ECU Power Supply and SWS Communication Circuit



Main Index
Group TOC

COMMENTS ON TROUBLE SYMPTOM

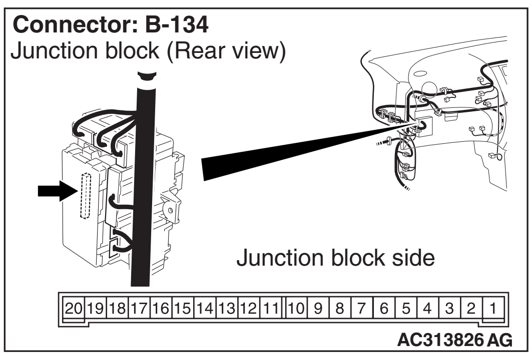
It is suspected that the power supply circuit to the ETACS-ECU is defective, or the wiring harness between the SWS monitor and the ETACS-ECU or their connector(s) is damaged. If the battery power supply circuit to the ECU (terminal No.20 of the ETACS-ECU) is damaged, also check the power supply circuit from the ignition switch (IG1) (terminal No.8 of the ETACS-ECU), and repair if necessary. If the earth circuit to the ECU (terminal No.2 of the ETACS-ECU) is defective, also check the earth circuit to the sensor (terminal No.70 of the ETACS-ECU), and repair if necessary.

TROUBLESHOOTING HINTS

- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

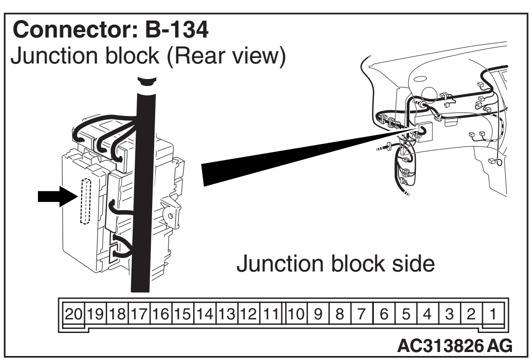
DIAGNOSIS PROCEDURE

Step 1. Connector check: B-134 ETACS-ECU connector

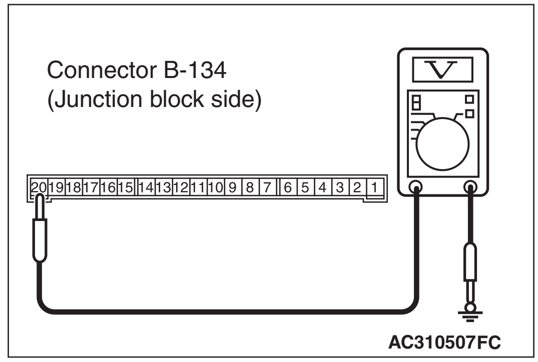


Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Voltage measurement at the B-134 ETACS-ECU connector.



(1) Remove the ETACS-ECU, and measure at the junction block side.

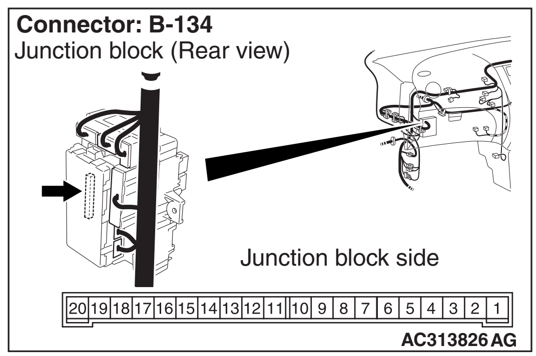


(2) Voltage between B-134 ETACS-ECU connector terminal No.20 and body earth

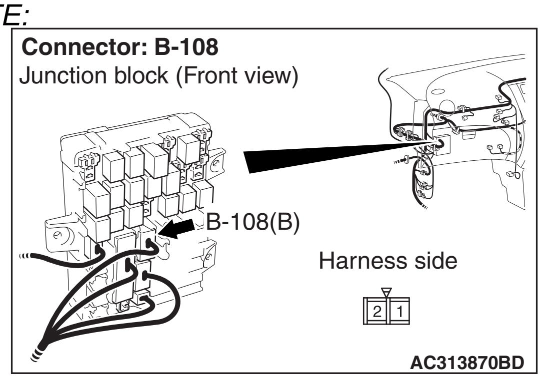
OK: System voltage

Q: Is the check result normal?
YES : Go to Step 4.
NO : Go to Step 3.

Step 3. Check the wiring harness between B-134 ETACS-ECU connector terminal No.20 to fusible link (1).



NOTE:



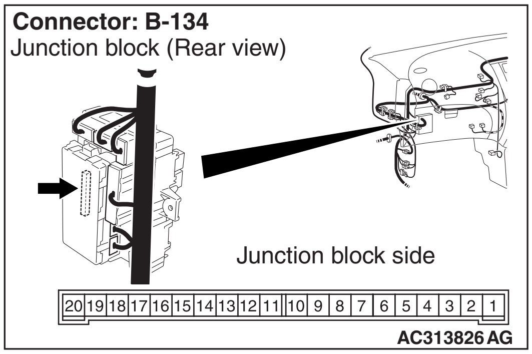
Prior to the wiring harness inspection, check junction block connector B-108, and repair if necessary.

- Check the power supply line for open circuit.

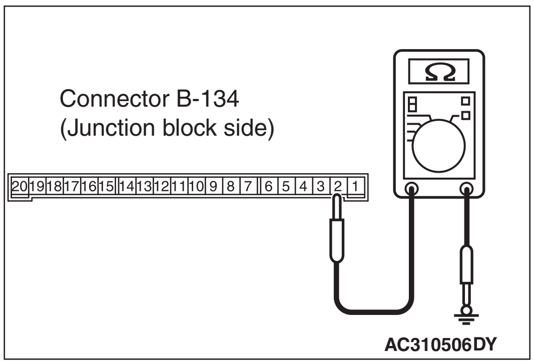
Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the wiring harness.

Main Index
Group TOC

Step 4. Resistance measurement at the B-134 ETACS-ECU connector.



(1) Remove the ETACS-ECU, and measure at the junction block side.



(2) Resistance between B-134 ETACS-ECU connector terminal No.2 and body earth

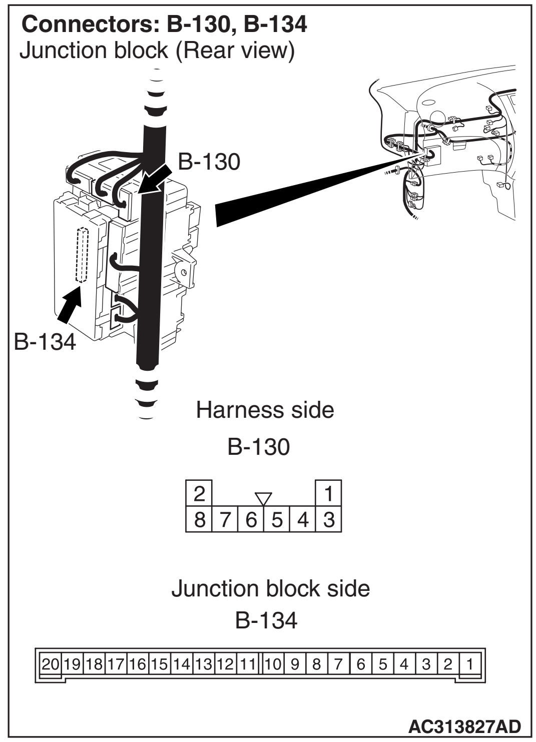
OK: Continuity exists (2 Ω or less)

Q: Is the check result normal?

YES : Go to Step 6.

NO : Go to Step 5.

Step 5. Check the wiring harness between B-134 ETACS-ECU connector terminal No.2 to body earth.



NOTE: Prior to the wiring harness inspection, check junction block connector B-130, and repair if necessary.

- Check the earth wires for open circuit.

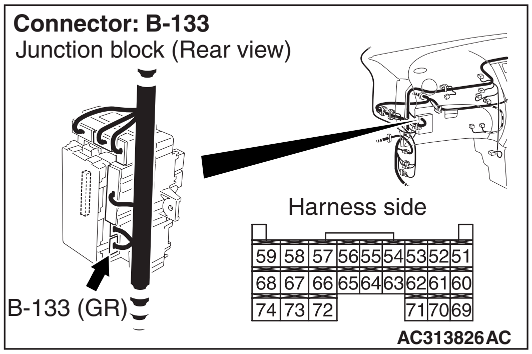
Q: Is the check result normal?

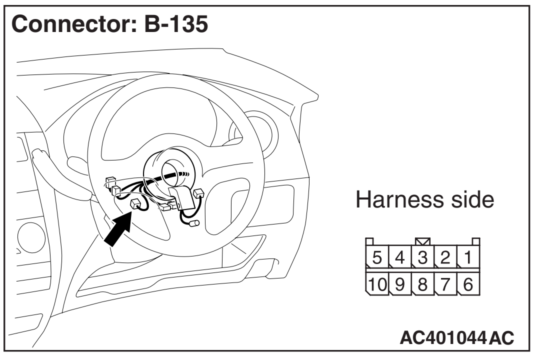
YES : Go to Step 8.

NO : Repair the wiring harness.

Main Index
Group TOC

Step 6. Connector check: B-133 ETACS-ECU connector and B-135 column switch connector



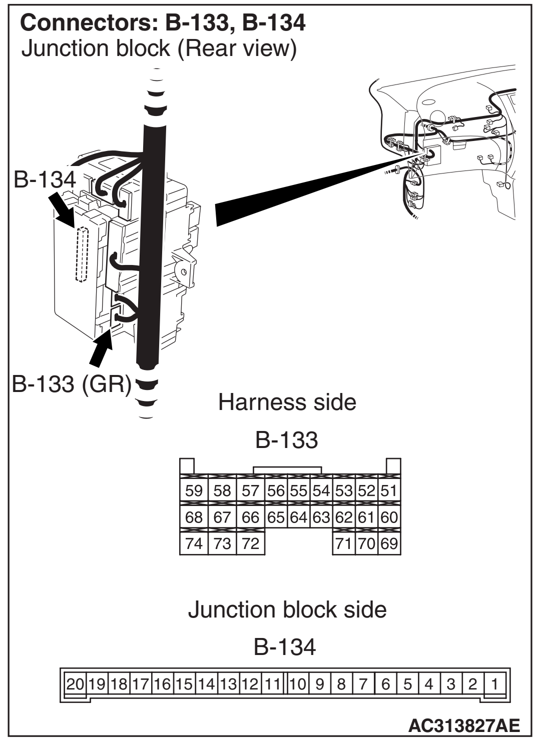


Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the defective connector.

Step 7. Check the wiring harness from B-133 ETACS-ECU connector terminal Nos. 54 and 63 to B-134 column switch connector terminal Nos. 3 and 2.



- Check the communication lines for open circuit.

Q: Is the check result normal?

YES : Go to Step 8.

NO : Repair the wiring harness.

Step 8. ECU check by using the SWS monitor

- Ignition switch: OFF

ECU TO BE CHECKED

- ETACS ECU

OK: "OK" is displayed on the "ETACS ECU" menu.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

Main Index

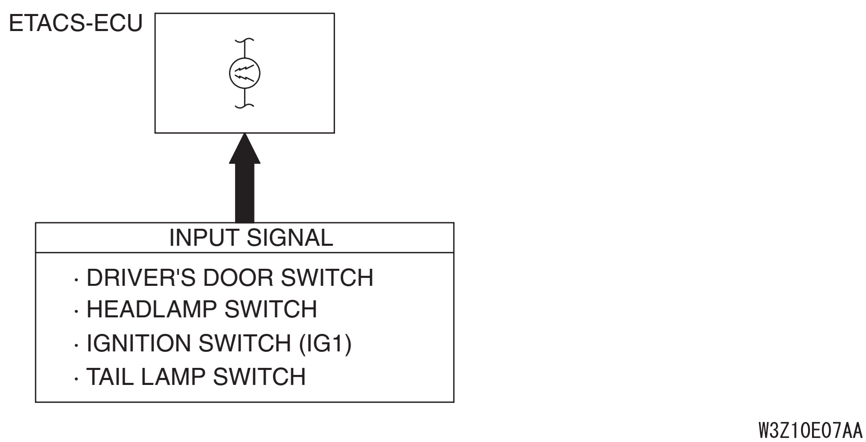
Group TOC

BUZZER

INSPECTION PROCEDURE B-1: Lamp reminder buzzer function does not work normally.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Lamp Reminder Tone Alarm Function



COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU operates this function in accordance with the input signals below.

- Ignition switch (IG1)
- Front door switch (RH)
- Tail lamp switch
- Headlamp switch

If this function does not work normally, these input signal circuit(s) or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the front door switch (RH)
- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSTIC PROCEDURE

Step 1. ECU check by using the SWS monitor

Check that the power supply and earth lines to the ETACS-ECU and the column switch (column-ECU) and the SWS communication lines are normal.

- Ignition switch: OFF

ECU TO BE CHECKED

- ETACS ECU
- COLUMN ECU

OK: "OK" are displayed for all the items

Q: Is the check result normal?

"OK" is displayed for all the items : Go to Step 2.

"NG" is displayed on the "ETACS ECU" menu. : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

"NG" is displayed on the "COLUMN ECU" menu. : Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-37."

Main Index
Group TOC

Step 2. Function diagnosis by using the SWS monitor

Check the SWS communication signal, which are related to the lamp reminder function.

<Selected item> BUZZER - LGT MONI. ALRM

- Ignition switch: OFF (key removed)
- lighting switch: TAIL or HEAD
- Driver's door: open

Item No.	Item name	Normal condition
Item 00	HEADLAMP SW	ON when the lighting switch is at HEAD
Item 01	TAIL LAMP SW	ON when the lighting switch is at TAIL
Item 30	IG SW(IG1)	OFF
Item 32	DR DOOR SW	ON
Item 43	BUZZER	ON

OK: Normal conditions are displayed for all the items.

Q: Is the check result normal?

Normal conditions are displayed for all the items. : Go to Step 3.

Normal condition is not displayed for item No.00 or No.01 : Refer to inspection procedure N-4 "Column switch (lighting and turn-signal lamp switch) signal is not received P.54C-208."

Normal condition is not displayed for item No.30 : Refer to inspection procedure N-2 "The ignition switch (IG1) signal is not received P.54C-203."

Normal condition is not displayed for item No.32 : Refer to inspection procedure N-3 "The driver's door switch signal is not received P.54C-205."

Normal condition is not displayed for item No.43 : Replace the ETACS-ECU.

Step 3. Retest the system.

The lamp reminder buzzer function should work normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

Main Index
Group TOC

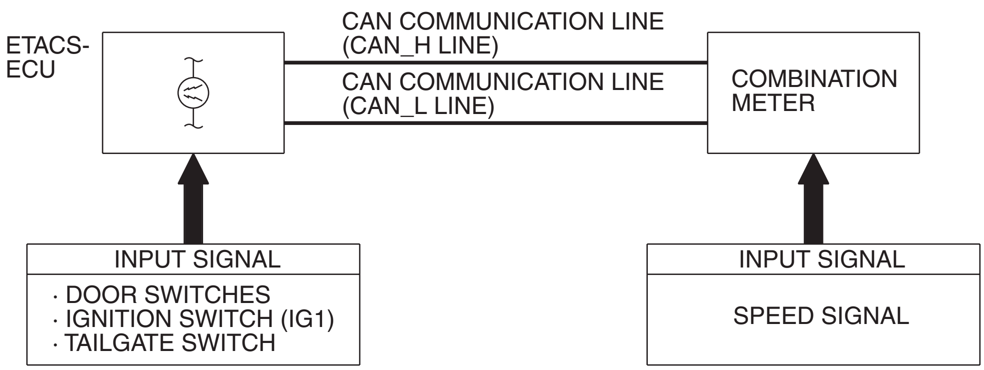
INSPECTION PROCEDURE B-2: Door-ajar warning buzzer function does not work.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

NOTE: If the CAN bus diagnostics is carried out, the door-ajar warning function is triggered.

Door-Ajar Warning Buzzer Function



COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU operates this function in accordance with the input signals below.

- Ignition switch (IG1)
- All of the door switches
- Vehicle speed signal

If this function does not work normally, these input signal circuit(s) or the ETACS-ECU may be defective. Note that this function can be disabled/enabled by the customise function (default setting; enabled). In order to change the setting, the SWS monitor is required.

POSSIBLE CAUSES

- Malfunction of the CAN bus line
- Malfunction of the door switches
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSTIC PROCEDURE

Step 1. Customise function by using the SWS monitor

Use the SWS monitor customisation function to confirm that "DOOR WARN BUZ" is set to "W.FUNCTION".

Q: Is the check result normal?

YES : Go to Step 2.

NO : Use the SWS monitor customisation function to set "DOOR WARN BUZ" to "W.FUNCTION" (Refer to P.54C-240).

Step 2. M.U.T.-III CAN bus diagnostics

Use the M.U.T.-III to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the CAN bus line (Refer to GROUP 54D, Diagnosis P.54D-13).

Step 3. M.U.T.-III other system diagnosis code

Check whether the combination meter-related diagnosis code is set.

Q: Is the diagnosis code set?

YES : Diagnose the combination meter (Refer to GROUP 54A – Troubleshooting P.54A-31).

NO : Go to Step 4.

Main Index
Group TOC

Step 4. ECU check by using the SWS monitor

Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: ON

ECU TO BE CHECKED

- ETACS ECU

OK: "OK" is displayed on the "ETACS ECU" menu.

Q: Is the check result normal?

YES : Go to Step 5.

NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Step 5. SWS monitor data list

Check the SWS communication signal, which is related to the door-ajar warning buzzer function.

<Selected item> ETACS ECU

- Ignition switch: ON
- Driver’s door: Open

Item No.	Item name	Normal condition
Item 30	IG SW(IG1)	ON
Item 32	DR DOOR SW	ON
Item 43	BUZZER	ON

OK: Normal condition is displayed.

Q: Is the check result normal?

Normal conditions are displayed for all the items. : Go to Step 6.

Normal condition is not displayed for item No.30. : Refer to inspection procedure N-2 "The ignition switch (IG1) signal is not received P.54C-203."

Normal condition is not displayed for item No.32. : Refer to inspection procedure N-3 "The driver's door switch signal is not received P.54C-205."

Normal condition is not displayed for item No.43. : Replace the ETACS-ECU.

Step 6. ETACS switch data by using the SWS monitor

Check the ETACS-ECU input signal related to the door-ajar warning buzzer function.

- Doors other than the driver's door (including the tailgate): Closed to open

Item No.	Item name	Normal condition
Item 40	ALL DOOR SW	ON

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : Go to Step 7.

NO : Refer to inspection procedure N-10 "All the door switch signals are not received P.54C-222."

Step 7. Retest the system.

Check that the door-ajar warning buzzer function works normally.

Q: Is the check result normal?

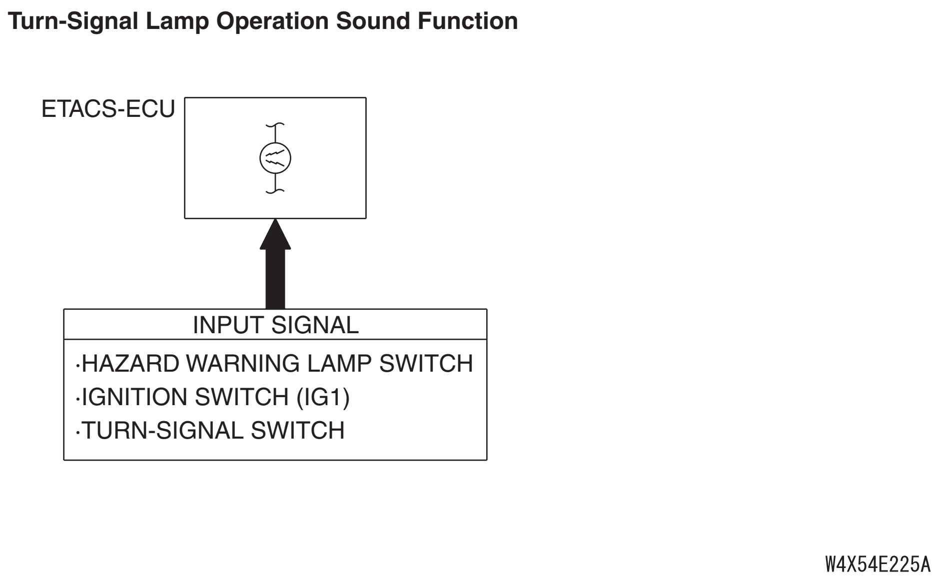
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

Main Index
Group TOC

INSPECTION PROCEDURE B-3: Turn-signal lamp operation sound function does not work normally.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.



COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU operates this function in accordance with the input signals below.

- Turn-signal lamp switch
- Hazard warning lamp switch

If this function does not work normally, these input signal circuit(s) or the ETACS-ECU may be defective. Note that this function can be disabled/enabled by the customisation function (default setting; disabled). In order to change the setting, the SWS monitor is required.

POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSTIC PROCEDURE

Step 1. Check that the turn-signal lamps operate.
When the turn-signal lamp switch or the hazard warning lamp switch is operated, check that the turn-signal lamps flash.

Q: Is the check result normal?
YES : Go to Step 2.
NO : First, repair the turn-signal lamp(s) (Refer to Trouble Symptom Chart P.54C-29).

Step 2. Customize function by using the SWS monitor
Use the SWS monitor customisation function to confirm that "T/SIG.BUZZER" is set to "W.FUNCTION".

Q: Is the check result normal?
YES : Go to Step 3.
NO : Use the SWS monitor customisation function to set "T/SIG.BUZZER" to "W.FUNCTION" (Refer to P.54C-240).

Main Index
Group TOC

Step 3. ECU check by using the SWS monitor

Check that the power supply and earth lines to the ETACS-ECU and the column switch (column-ECU) and the SWS communication lines are normal.

- Ignition switch: ON

ECU TO BE CHECKED

- ETACS-ECU
- Column ECU

OK: "OK" are displayed for all the items

Q: Is the check result normal?

Normal conditions are displayed for all the items. : Go to Step 4.

"NG" is displayed on the "ETACS ECU" menu. : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

"NG" is displayed on the "COLUMN ECU" menu. : Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-37."

Step 4. SWS monitor data list

Check the SWS communication input signal, which are related to the turn-signal lamp operation sound function.

<Selected item> ETACS-ECU

- Hazard warning switch: ON

Item No.	Item name	Normal condition
Item 43	BUZZER	ON

OK: Normal conditions are displayed for all the items.

Q: Is the check result normal?

YES : Go to Step 5.

NO : Replace the ETACS-ECU.

Step 5. Retest the system.

Check that the turn-signal lamp operation sound function works normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

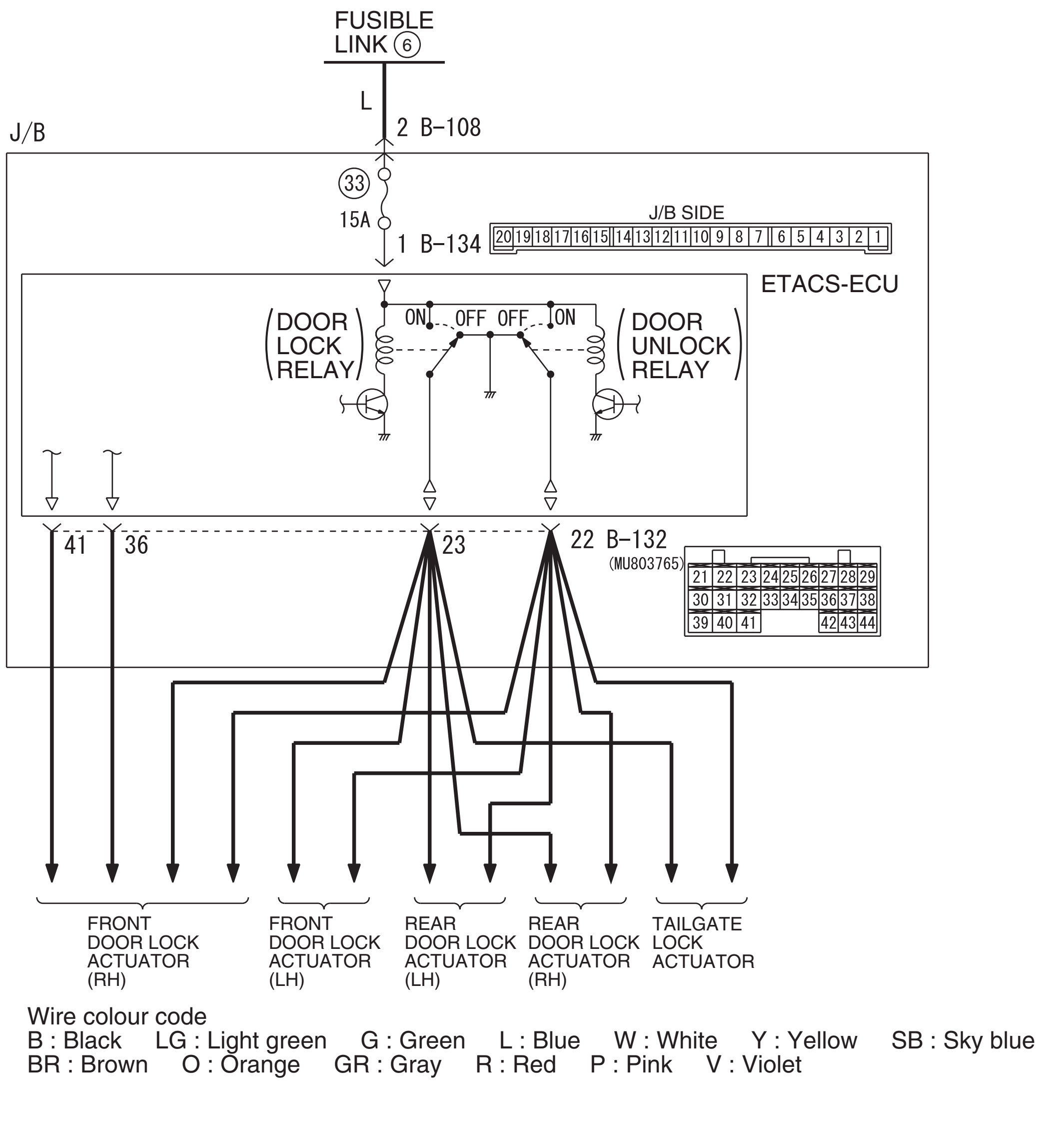
CENTRAL DOOR LOCKING SYSTEM

INSPECTION PROCEDURE C-1: Central door locking system does not work.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Central Door Lock Power Supply Circuit



COMMENT ON TROUBLE SYMPTOM

If the central door locking system does not work at all, the front door lock actuator (RH) or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the front door lock actuator (RH)
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

Main Index
Group TOC

DIAGNOSIS PROCEDURE

Step 1. ECU check by using the SWS monitor

Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

ECU TO BE CHECKED

- ETACS ECU

OK: "OK" is displayed on the "ETACS ECU" menu.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Step 2. ETACS switch data by using the SWS monitor

Check the ETACS-ECU input signal related to the central door locking system.

- Driver's door lock actuator switch: LOCK → UNLOCK

Item No.	Item name	Normal condition
Item 21	DR DOR LCK SW	from OFF to ON
Item 22	DR DOR ULK SW	from ON to OFF

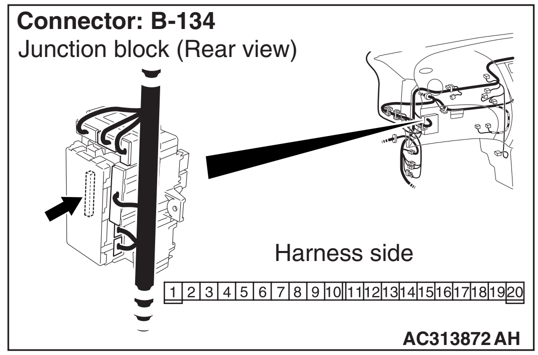
OK: Normal conditions are displayed for all the items.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Refer to inspection procedure N-11 "The driver's door lock actuator switch signal is not received P.54C-226."

Step 3. Connector check: B-134 ETACS-ECU connector

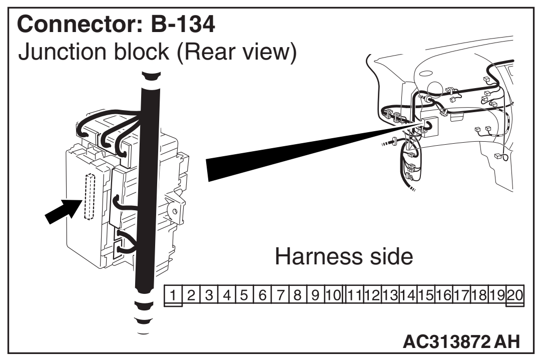


Q: Is the check result normal?

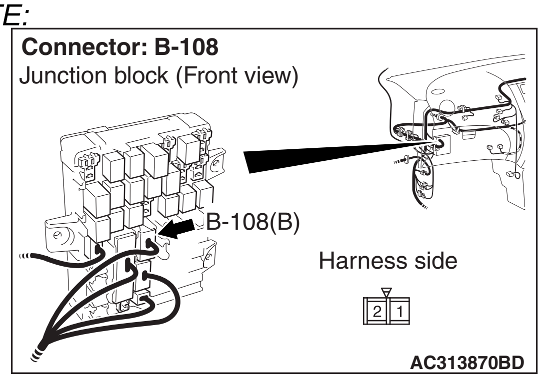
YES : Go to Step 4.

NO : Repair the defective connector.

Step 4. Check the wiring harness between B-134 ETACS-ECU connector terminal No.1 to fusible link (6).



NOTE:



Prior to the wiring harness inspection, check junction block connector B-108, and repair if necessary.

- Check the power supply line for open or short circuit.

Q: Is the check result normal?

YES : Go to Step 5.

NO : Repair the wiring harness.

Main Index
Group TOC

Step 5. Retest the system.
Check that the central door locking system works normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Replace the ETACS-ECU.

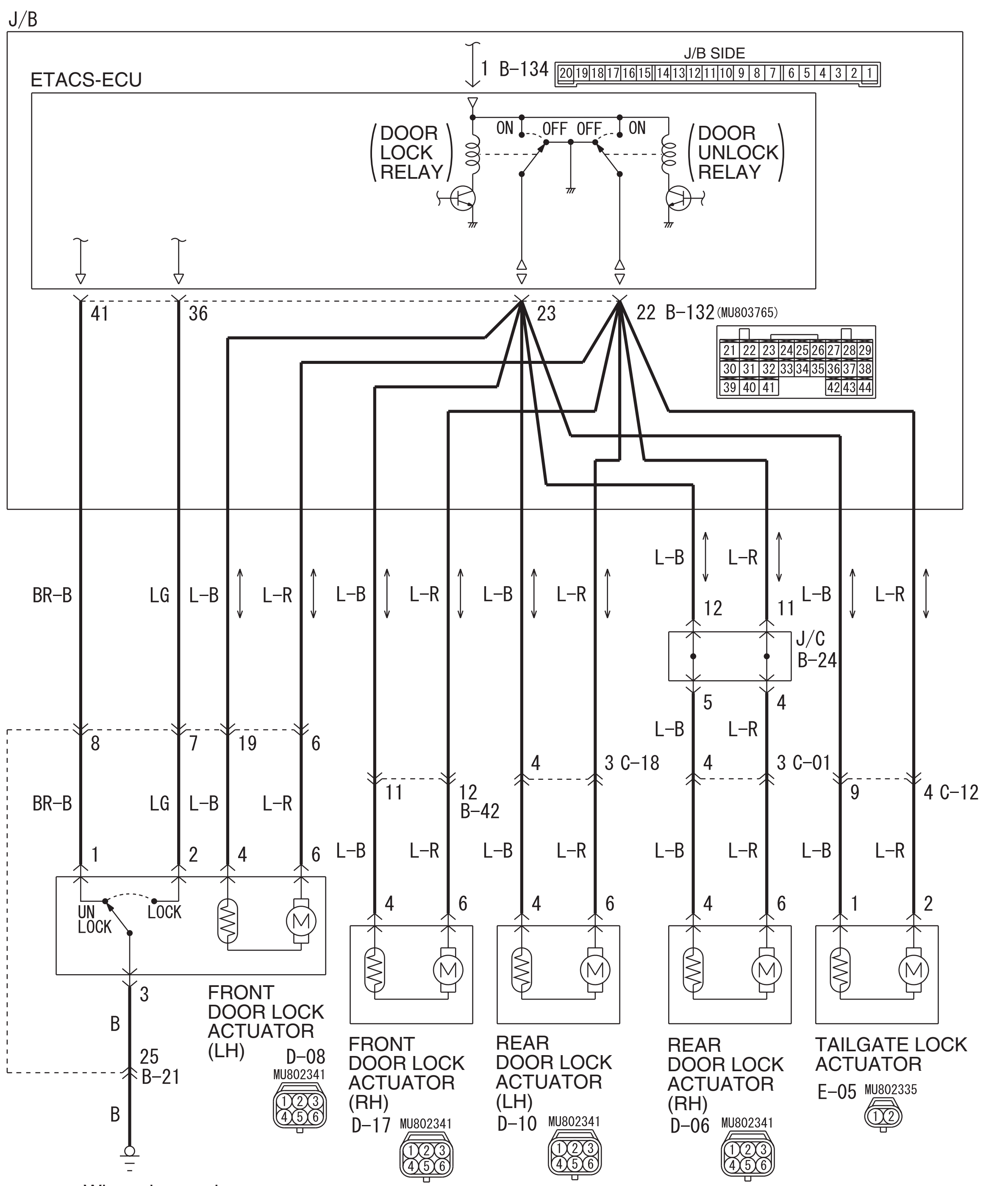
Main Index
Group TOC

INSPECTION PROCEDURE C-2: A door can not be locked or unlocked by the central door locking system.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Central Door Lock Circuit



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4N54L015A

Main Index
Group TOC

COMMENT ON TROUBLE SYMPTOM

If a door can not be locked or unlocked by the central door locking system, the door lock actuator may be defective.

POSSIBLE CAUSES

- Malfunction of the door lock actuator
- Damaged harness wires and connectors

DIAGNOSTIC PROCEDURE

Step 1. Confirm which door lock actuator is defective.

Q: Which door fails to lock correctly?

Driver's door : Go to Step 2.
Front passenger's door : Go to Step 5.
Rear right door : Go to Step 8.
Rear left door : Go to Step 11.
Tailgate : Go to Step 14.

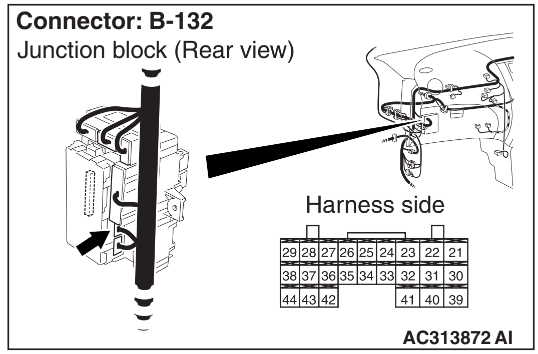
Step 2. Check the front door lock actuator (RH)

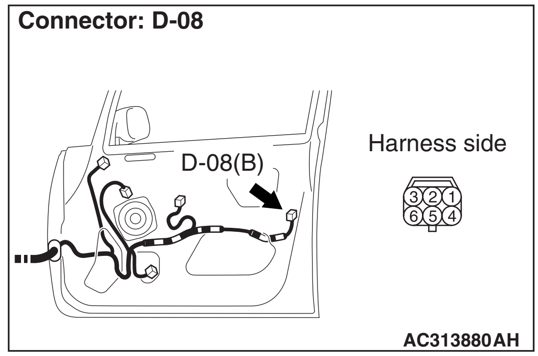
Check that the front door lock actuator (RH) works normally. Refer to GROUP 42 – Door P.42-46.

Q: Is the check result normal?

YES : Go to Step 3.
NO : Replace the front door lock actuator (RH).

Step 3. Connector check: B-132 ETACS-ECU connector, D-08 front door lock actuator (RH) connector



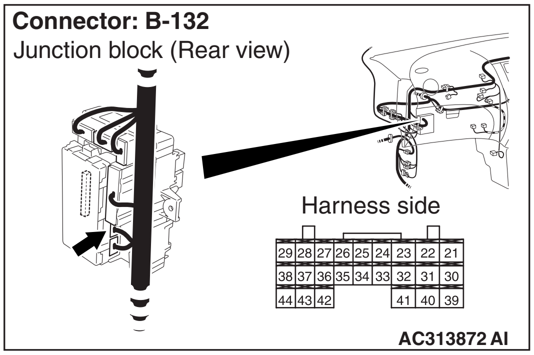


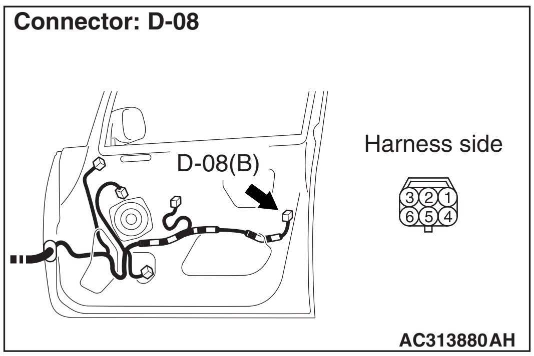
Q: Is the check result normal?

YES : Go to Step4.
NO : Repair the defective connector.

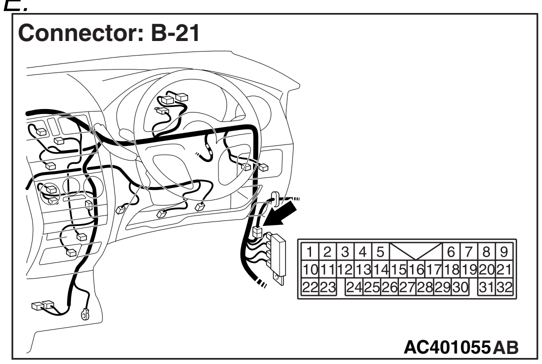
Main Index
Group TOC

Step 4. Check the wiring harness from B-132 ETACS-ECU connector terminal Nos.22 and 23 to D-08 front door lock actuator (RH) connector terminal Nos. 6 and 4.





NOTE:



Prior to the wiring harness inspection, check intermediate connector B-21, and repair if necessary.

- Check the input and output lines for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 5. Check the front door lock actuator (LH)

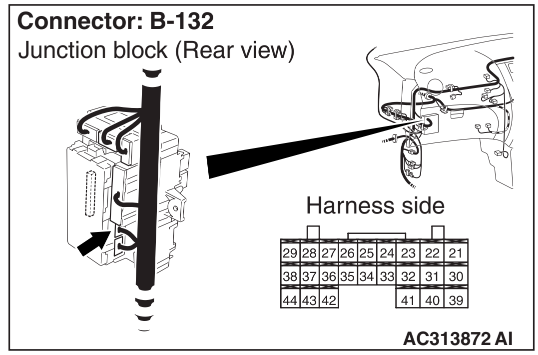
Check that the front door lock actuator (LH) works normally. Refer to GROUP 42 – Door P.42-46.

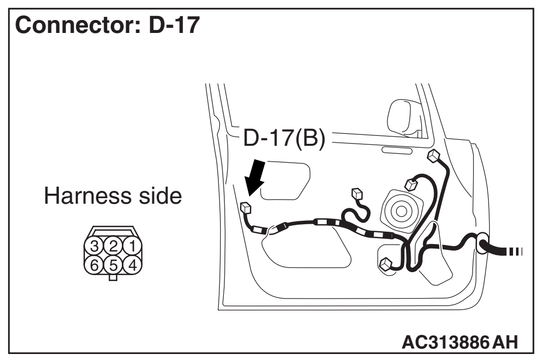
Q: Is the check result normal?

YES : Go to Step 6.

NO : Replace the front door lock actuator (LH).

Step 6. Connector check: B-132 ETACS-ECU connector, D-17 front door lock actuator (LH) connector





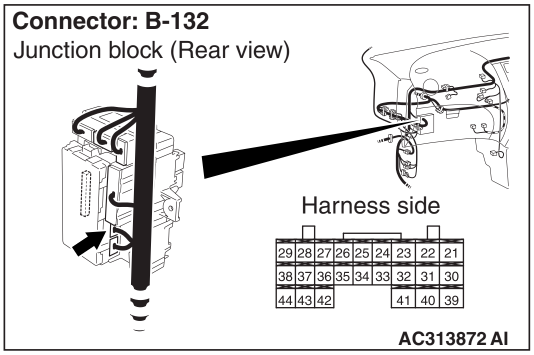
Q: Is the check result normal?

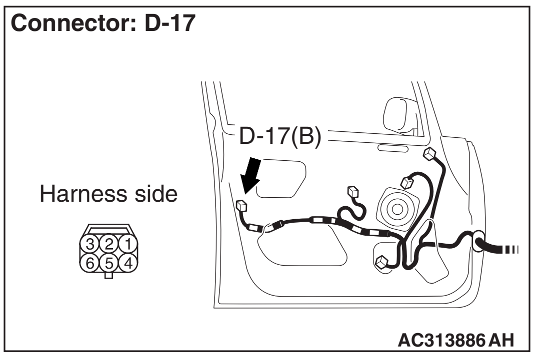
YES : Go to Step 7.

NO : Repair the defective connector.

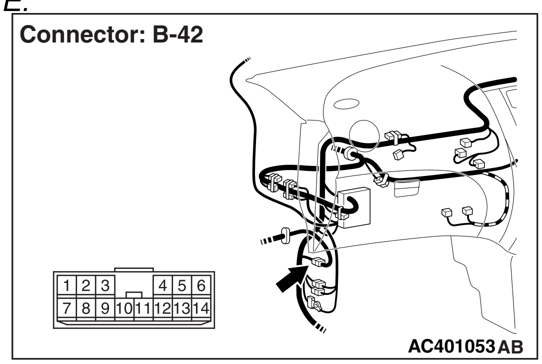
Main Index
Group TOC

Step 7. Check the wiring harness from B-132 ETACS-ECU connector terminal Nos.22 and 23 to D-17 front door lock actuator (LH) connector terminal Nos. 6 and 4.





NOTE:



Prior to the wiring harness inspection, check intermediate connector B-42, and repair if necessary.

- Check the input and output lines for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 8. Check the rear door lock actuator (RH)

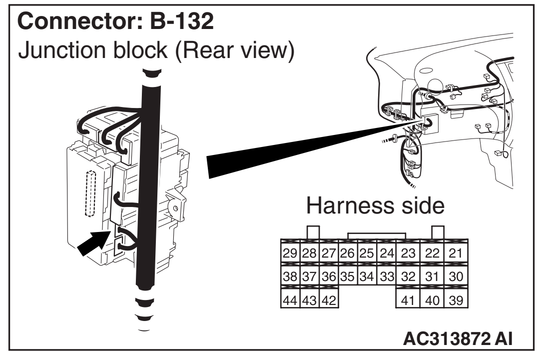
Check that the rear door lock actuator (RH) works normally. Refer to GROUP 42 – Door P.42-46.

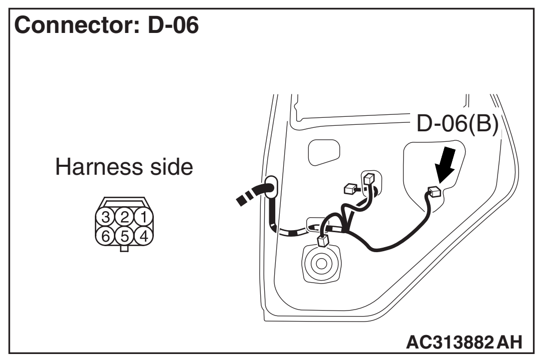
Q: Is the check result normal?

YES : Go to Step 9.

NO : Replace the rear door lock actuator (RH).

Step 9. Connector check: B-132 ETACS-ECU connector, D-06 rear door lock actuator (RH) connector





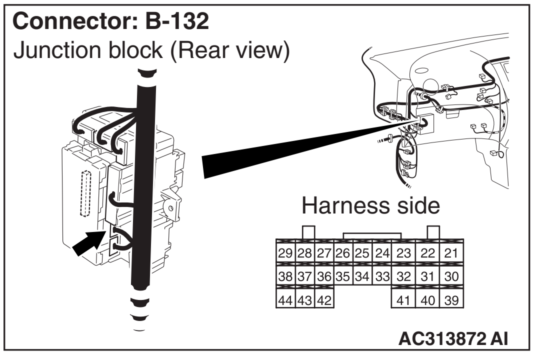
Q: Is the check result normal?

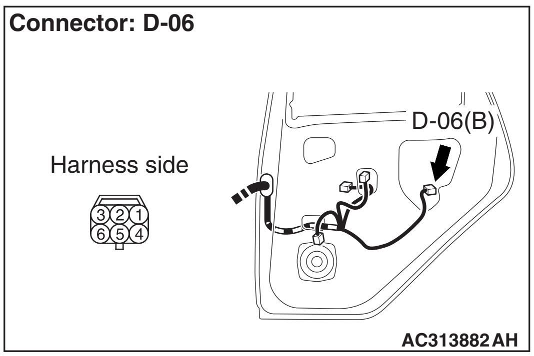
YES : Go to Step 10.

NO : Repair the defective connector.

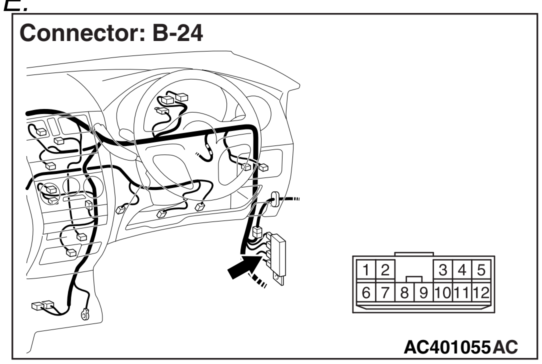
Main Index
Group TOC

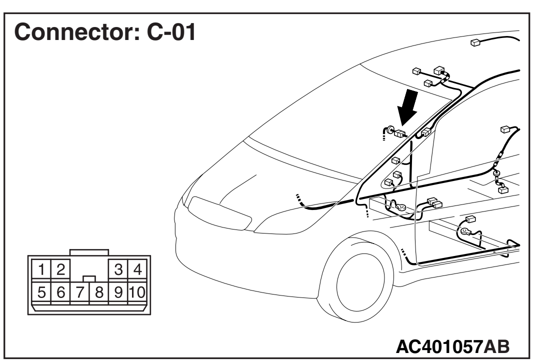
Step 10. Check the wiring harness from B-132 ETACS-ECU connector terminal Nos.22 and 23 to D-06 rear door lock actuator (RH) connector terminal Nos. 6 and 4.





NOTE:





Prior to the wiring harness inspection, check intermediate connector C-01 and joint connector B-24, and repair if necessary.

- Check the input and output lines for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 11. Check the rear door lock actuator (LH)

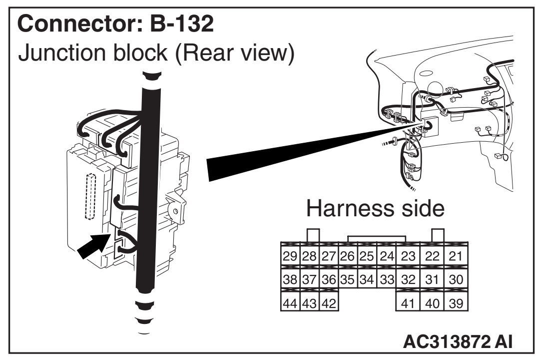
Check that the rear door lock actuator (LH) works normally. Refer to GROUP 42 – Door P.42-46.

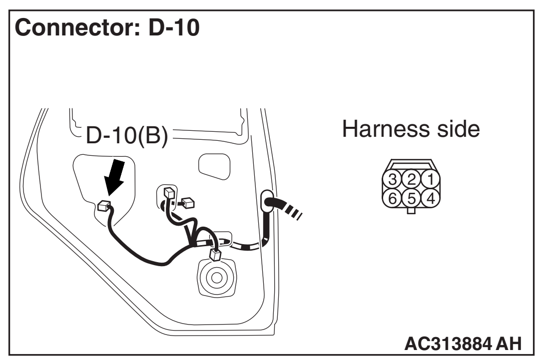
Q: Is the check result normal?

YES : Go to Step 12.

NO : Replace the rear door lock actuator (LH).

Step 12. Connector check: B-132 ETACS-ECU connector, D-10 rear door lock actuator (LH) connector





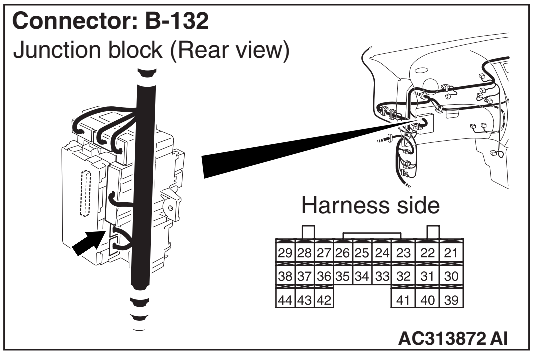
Q: Is the check result normal?

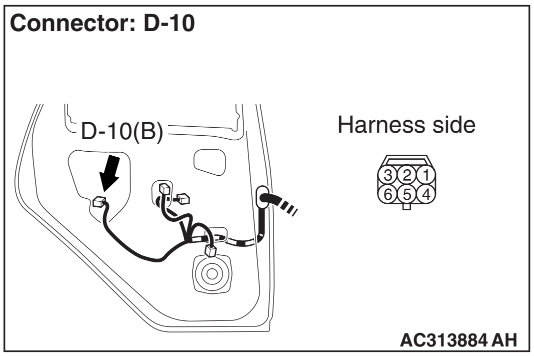
YES : Go to Step 13.

NO : Repair the defective connector.

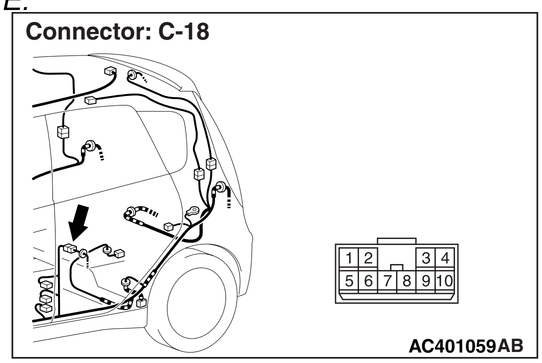
Main Index
Group TOC

Step 13. Check the wiring harness from B-132 ETACS-ECU connector terminal Nos.22 and 23 to D-10 rear door lock actuator (LH) connector terminal Nos. 6 and 4.





NOTE:



Prior to the wiring harness inspection, check intermediate connector C-18, and repair if necessary.

- Check the input and output lines for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 14. Check the tailgate lock actuator

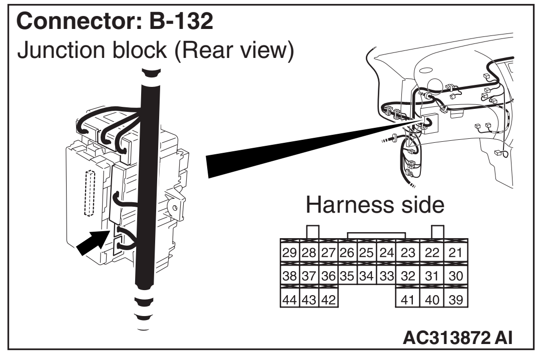
Check that the tailgate lock actuator works normally. Refer to GROUP 42 – tailgate P.42-59.

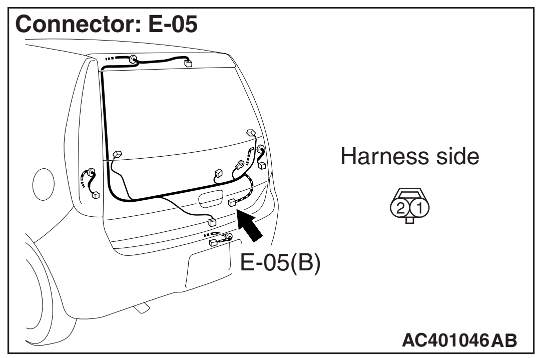
Q: Is the check result normal?

YES : Go to Step 15.

NO : Replace the tailgate lock actuator.

Step 15. Connector check: B-132 ETACS-ECU connector, E-05 tailgate lock actuator connector





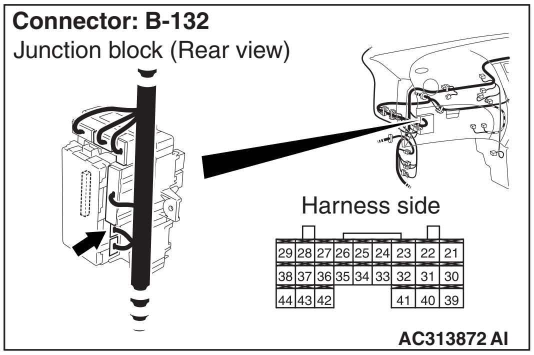
Q: Is the check result normal?

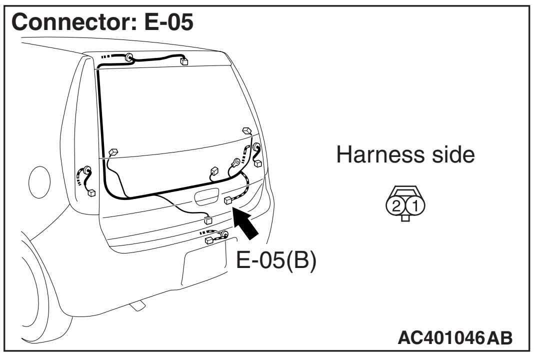
YES : Go to Step16.

NO : Repair the defective connector.

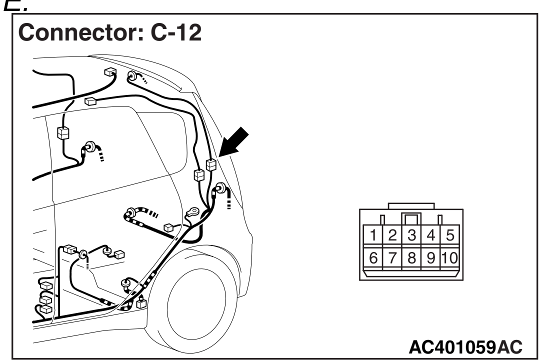
Main Index
Group TOC

Step 16. Check the wiring harness from B-132 ETACS-ECU connector terminal Nos.22 and 23 to E-05 tailgate lock actuator connector terminal Nos. 2 and 1.





NOTE:



Prior to the wiring harness inspection, check intermediate connector C-12, and repair if necessary.

- Check the input and output lines for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

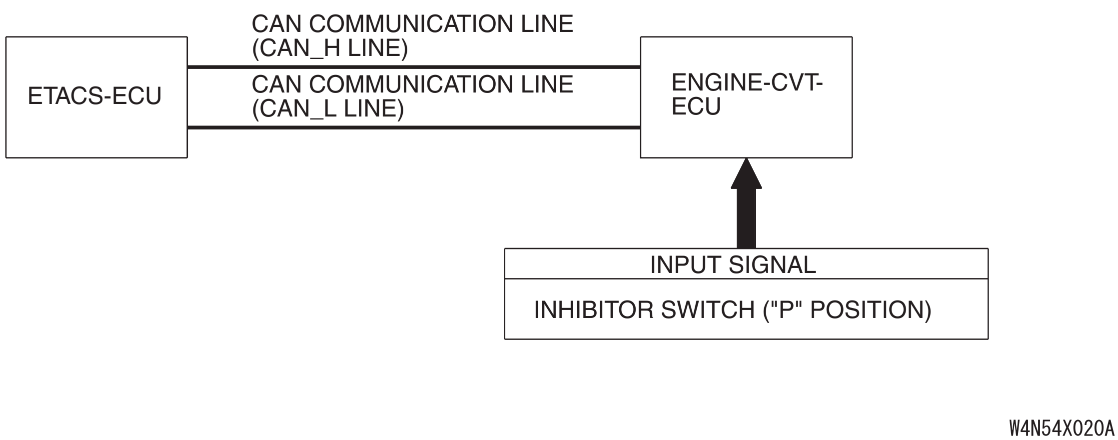
NO : Repair the wiring harness.

Main Index
Group TOC

INSPECTION PROCEDURE C-3: Selector "P" position-linked door unlock function does not operate. <CVT>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Selector "P" Position-linked Door Unlock Function



COMMENT ON TROUBLE SYMPTOM

If the doors are not unlocked when the selector lever is shifted to the P position, the shift position signal input circuit(s) or the ETACS-ECU may be defective. Also, the function to interlock the shift P position with door unlocking may have been disabled with a customisation function.

POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Checking central door unlocking operation

Check that the central door locking system works normally.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure C-1 "Central door locking system does not work P.54C-51."

Step 2. Customize function by using the SWS monitor

Use the SWS monitor customisation function to confirm that "P UNLOCK ACT" is set to "W.FUNCTION".

Q: Is the check result normal?
YES : Go to Step 3.
NO : Use the SWS monitor customisation function to set "P UNLOCK ACT" to "W.FUNCTION" (Refer to P.54C-240).

Step 3. M.U.T.-III other system diagnosis code

Check whether the engine-CVT-ECU-related diagnosis code is set.

Q: Is the diagnosis code set?
YES : Diagnose the CVT (Refer to GROUP 23A – Troubleshooting P.23A-14).
NO : Go to Step 4.

Step 4. Retest the system.

Check that shifting the selector lever to the P position unlocks the doors.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Replace the ETACS-ECU.

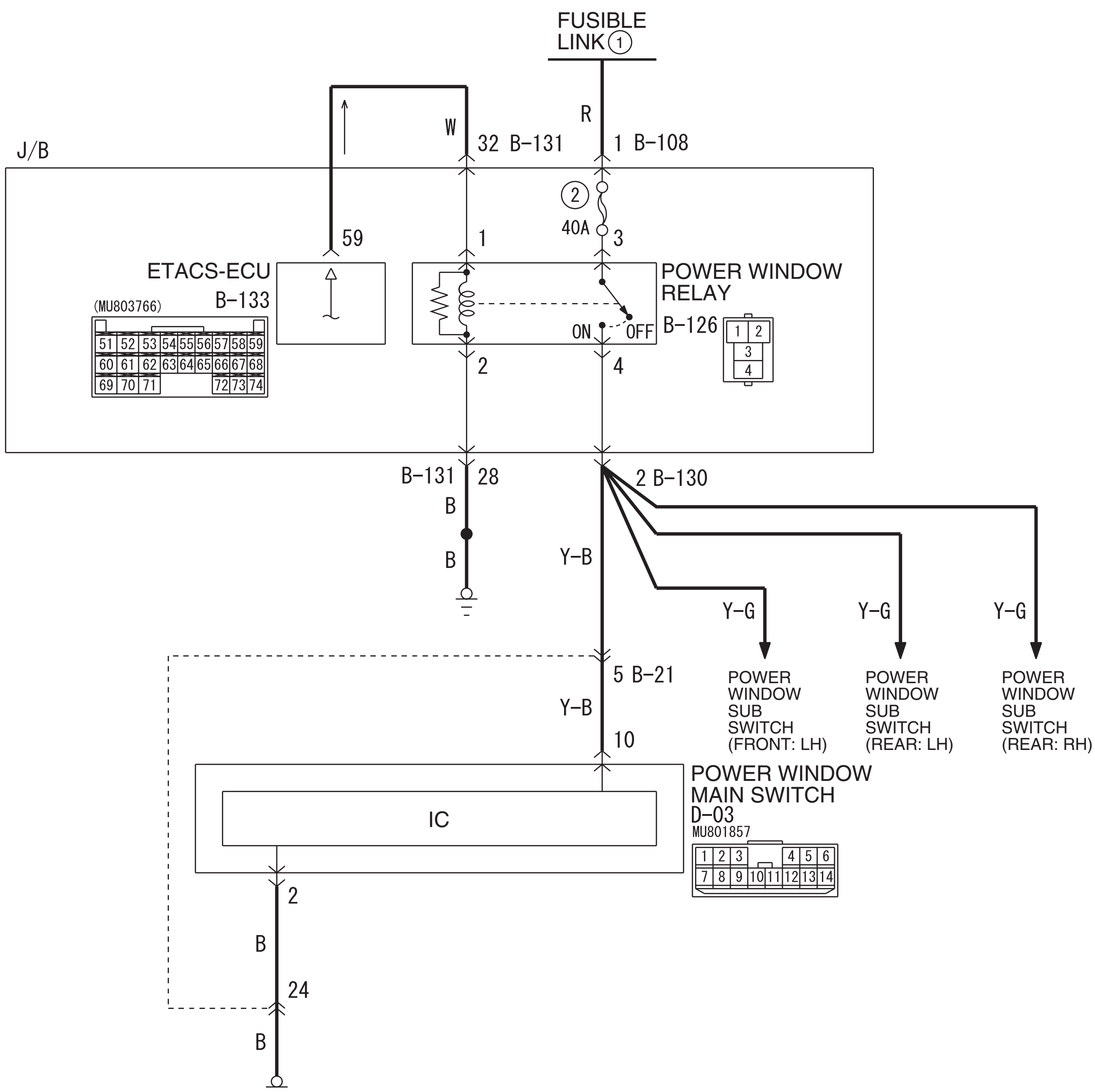
Main Index
Group TOC

POWER WINDOW

Inspection Procedure D-1: Power windows do not work at all.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Power Window Relay Circuit



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4N54L008A

Main Index
Group TOC

COMMENTS ON TROUBLE SYMPTOM

If the power windows do not work at all, the power window relay, the power window main switch or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the power window relay
- Malfunction of the power window main switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. ECU check by using the SWS monitor

Check that the power supply and earth lines to the ETACS-ECU and the power window main switch (power window module) and the SWS communication lines are normal.

- Turn the ignition switch to the ON position.

ECU TO BE CHECKED

- ETACS ECU

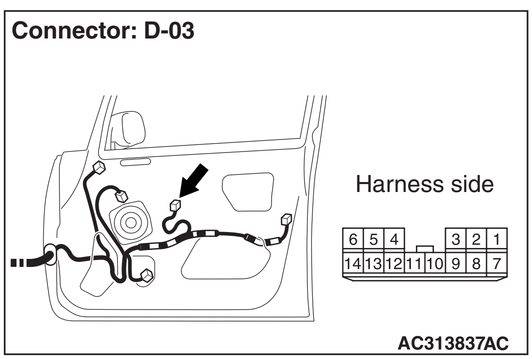
OK: "OK" are displayed for all the items

Q: Are the check results normal?

"OK" are displayed for all the items : Go to Step 2.

"NG" is displayed on the "ETACS ECU" menu. : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Step 2. Connector check: D-03 power window main switch connector



Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the defective connector.

Step 3. Check the power window main switch.

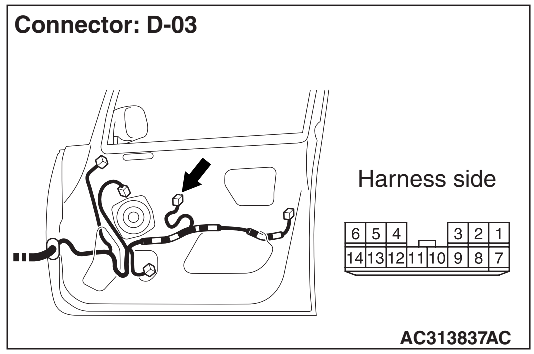
Refer to GROUP 42 – Door P.42-42.

Q: Is the check result normal?

YES : Go to Step 4.

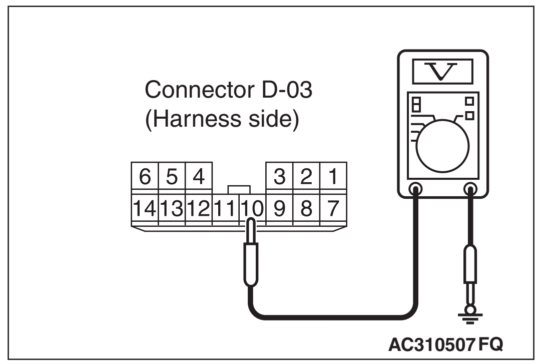
NO : Replace the power window main switch.

Step 4. Voltage measurement at the D-03 power window main switch connector.



(1) Disconnect the connector, and measure at the wiring harness side.

(2) Ignition switch: ON



(3) Voltage between D-03 power window main switch connector terminal No.10 and body earth.

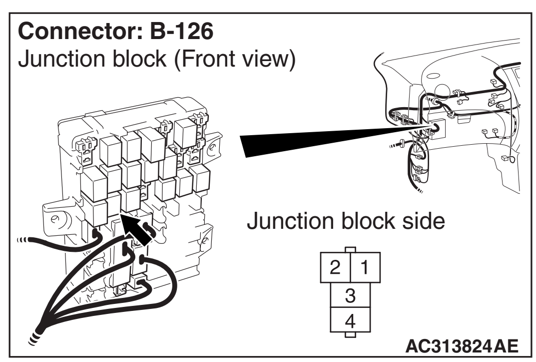
OK: System voltage

Q: Is the check result normal?

YES : Go to Step 13.

NO : Go to Step 5.

Step 5. Connector check: B-126 power window relay connector



Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair the defective connector.

Main Index
Group TOC

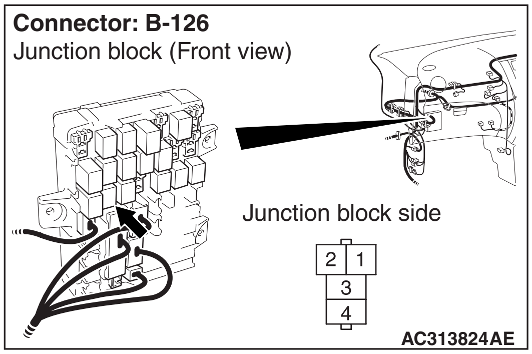
Step 6. Check the power window relay.

Refer to GROUP 42 – Door P.42-36.

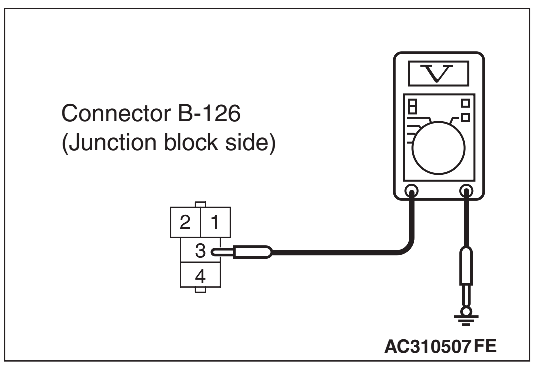
Q: Is the check result normal?

YES : Go to Step 7.
NO : Replace the power window relay.

Step 7. Voltage measurement at the B-126 power window relay connector.



(1) Remove the power window relay, and measure at the junction block side.



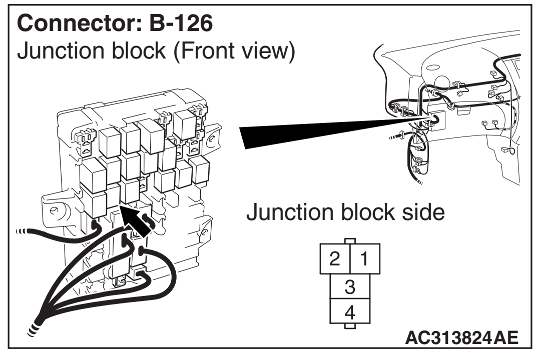
(2) Voltage between B-126 power window relay connector terminal No.3 and body earth.

OK: System voltage

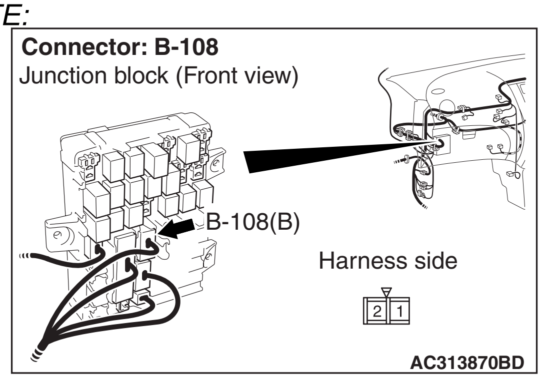
Q: Is the check result normal?

YES : Go to Step 9.
NO : Go to Step 8.

Step 8. Check the wiring harness between B-126 power window relay connector terminal No.3 to fusible link (1).



NOTE:



Prior to the wiring harness inspection, check junction block connector B-108, and repair if necessary.

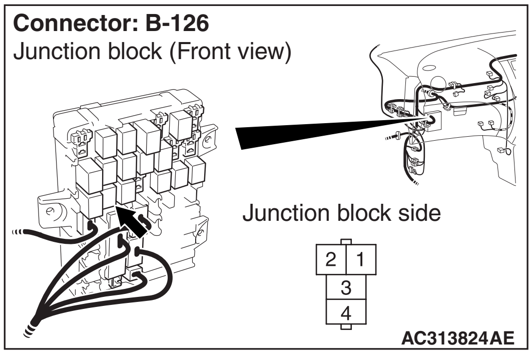
- Check the power supply line for open circuit.

Q: Is the check result normal?

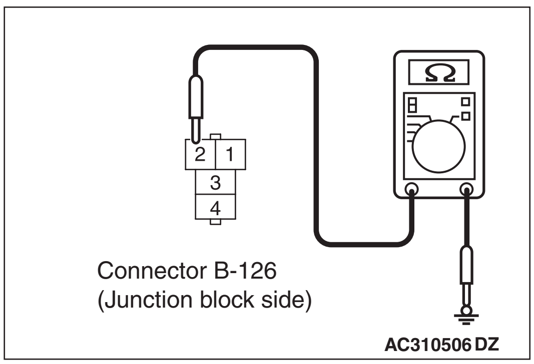
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Repair the wiring harness.

Main Index
Group TOC

Step 9. Resistance measurement at the B-126 power window relay connector.



(1) Remove the power window relay, and measure at the junction block side.



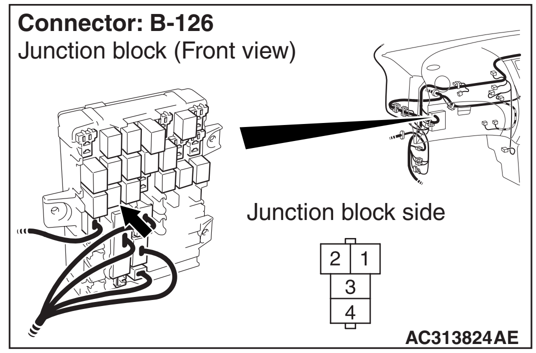
(2) Resistance between B-126 power window relay connector terminal No.2 and body earth.

OK: Continuity exists (2 Ω or less)

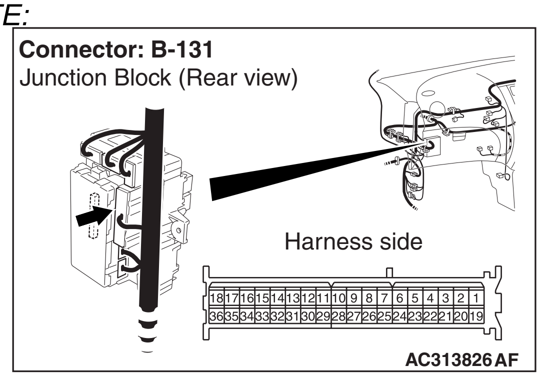
Q: Is the check result normal?

YES : Go to Step 11.
NO : Go to Step 10.

Step 10. Check the wiring harness between B-126 power window relay connector terminal No.2 to body earth.



NOTE:



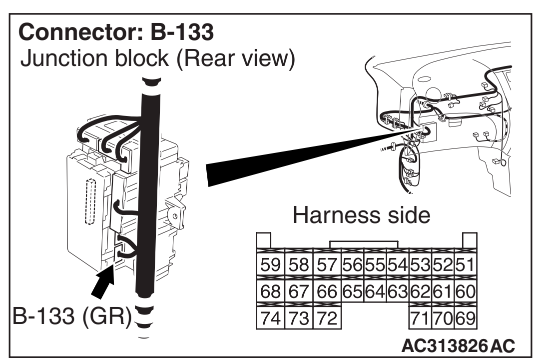
Prior to the wiring harness inspection, check junction block connector B-131, and repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Repair the wiring harness.

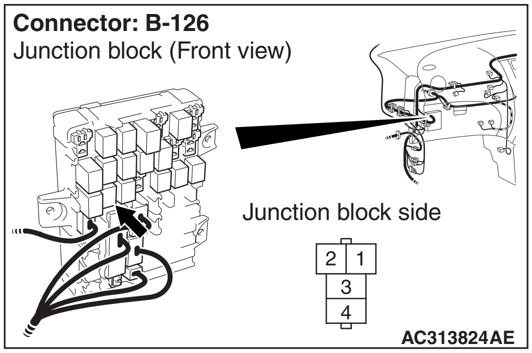
Step 11. Connector check: B-133 ETACS-ECU connector

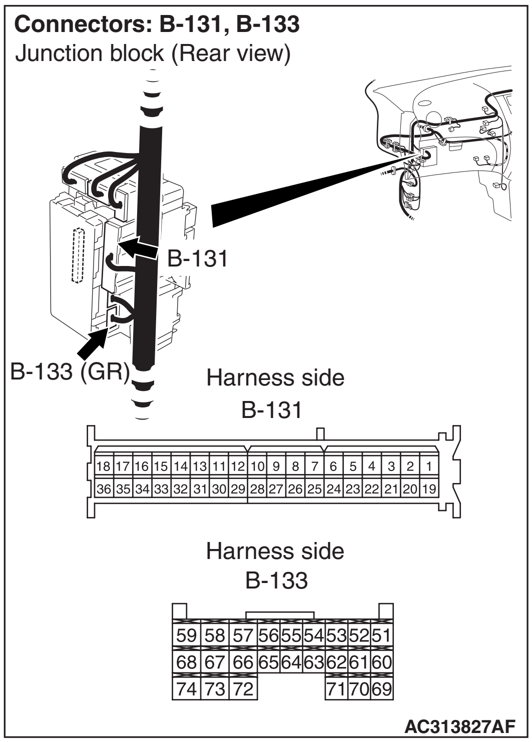


Q: Is the check result normal?

YES : Go to Step 12.
NO : Repair the defective connector.

Step 12. Check the wiring harness between B-126 power window relay connector terminal No.1 to B-133 ETACS-ECU connector terminal No.59.



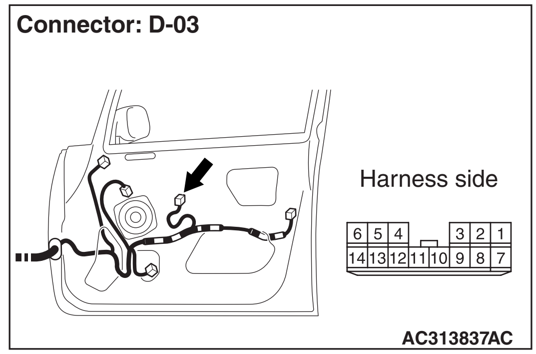


NOTE: Prior to the wiring harness inspection, check junction block connector B-131, and repair if necessary.

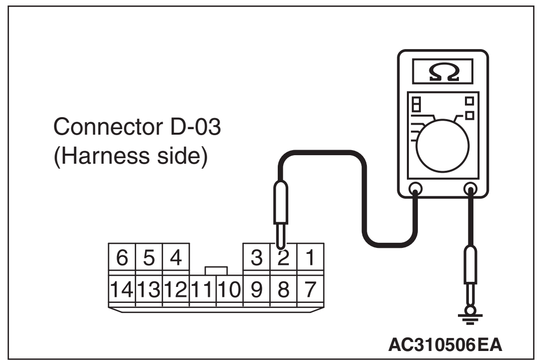
- Check the communication lines for open circuit.

Q: Is the check result normal?
YES : Go to Step 13.
NO : Repair the wiring harness.

Step 13. Resistance measurement at the D-03 power window main switch connector.



(1) Disconnect the connector, and measure at the wiring harness side.



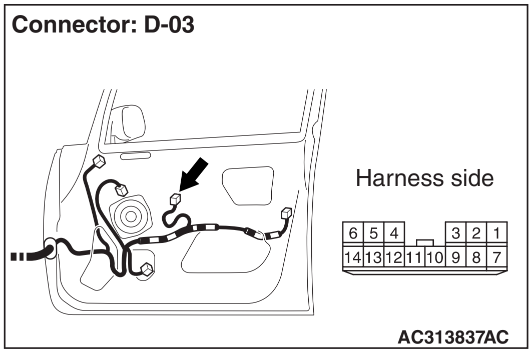
(2) Resistance between D-03 power window main switch connector terminal No.2 and body earth.

OK: Continuity exists (2 Ω or less)

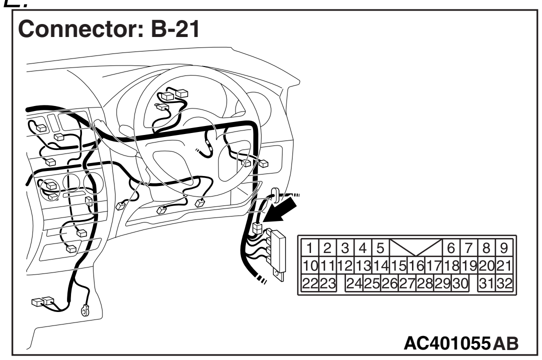
Q: Is the check result normal?
YES : Go to Step 15.
NO : Go to Step 14.

Main Index
Group TOC

Step 14. Check the wiring harness between D-03 power window main switch connector terminal No.2 to body earth.



NOTE:



Prior to the wiring harness inspection, check intermediate connectors B-21, and repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 15. Retest the system.

Check that all the power windows work.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

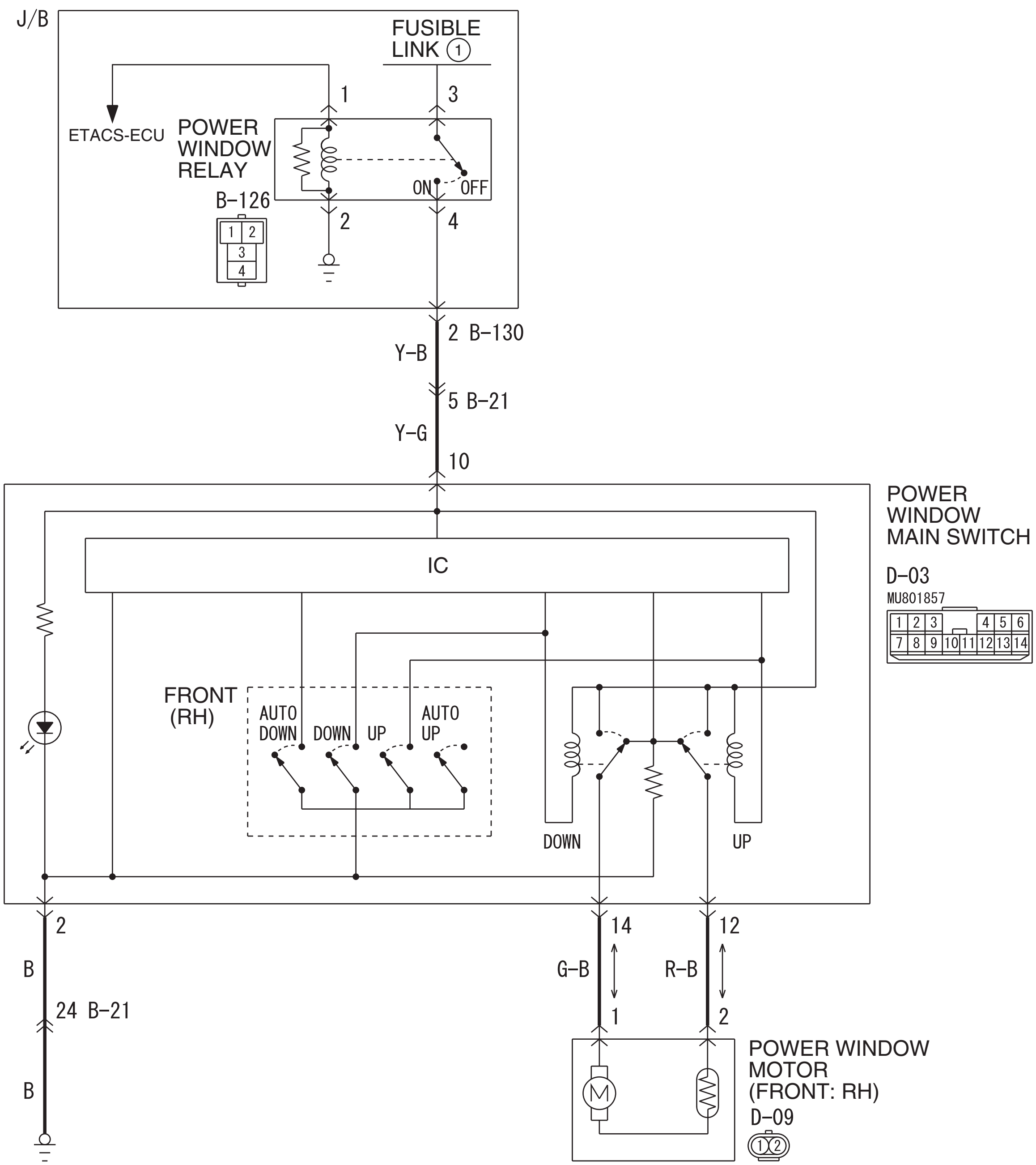
Main Index
Group TOC

Inspection Procedure D-2: Driver's power window does not work by means of the power window main switch.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Power Window (Front: RH) Circuit



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4N54L009A

Main Index
Group TOC

COMMENTS ON TROUBLE SYMPTOM

If the driver's power window does not work by means of the power window main switch, the power window main switch or the driver's door power window motor may be defective.

POSSIBLE CAUSES

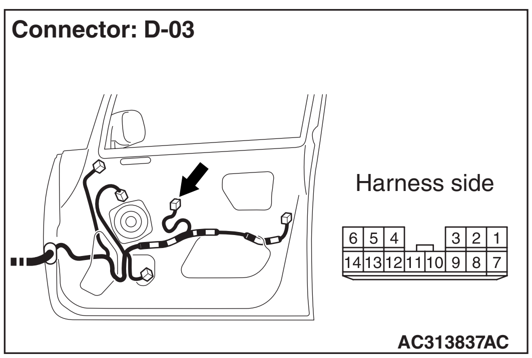
- Malfunction of the power window main switch
- Malfunction of the power window motor (front: RH)
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the power window main switch.
Check that all of the front passenger's and rear door power windows can operate by means of the power window main switch.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure D-1 "Power windows do not work at all P.54C-62."

Step 2. Connector check: D-03 power window main switch connector

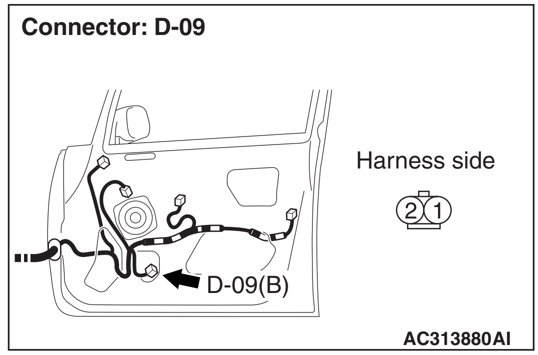


Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the connector.

Step 3. Check the power window main switch.
Refer to GROUP 42 – Door P.42-42.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the power window main switch.

Step 4. Connector check: D-09 power window motor (front: RH) connector



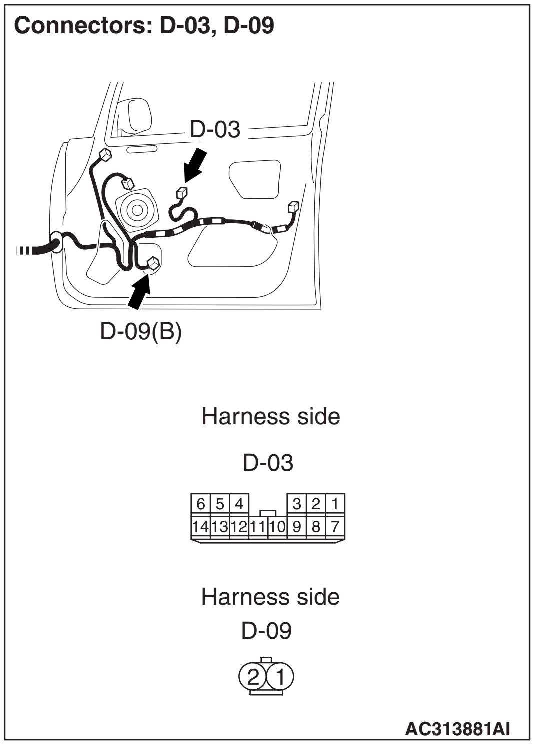
Q: Is the check result normal?
YES : Go to Step 5.
NO : Repair the connector.

Step 5. Check the power window motor (front: RH).
Refer to GROUP 42 – Door P.42-36.

Q: Is the check result normal?
YES : Go to Step 6.
NO : Replace the power window motor (front: RH).

Main Index
Group TOC

Step 6. Check the wiring harness from D-09 power window motor (front: RH) connector terminal Nos.1 and 2 to D-03 power window main switch connector terminal Nos. 14 and 12.



- Check the input and output lines for open or short circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

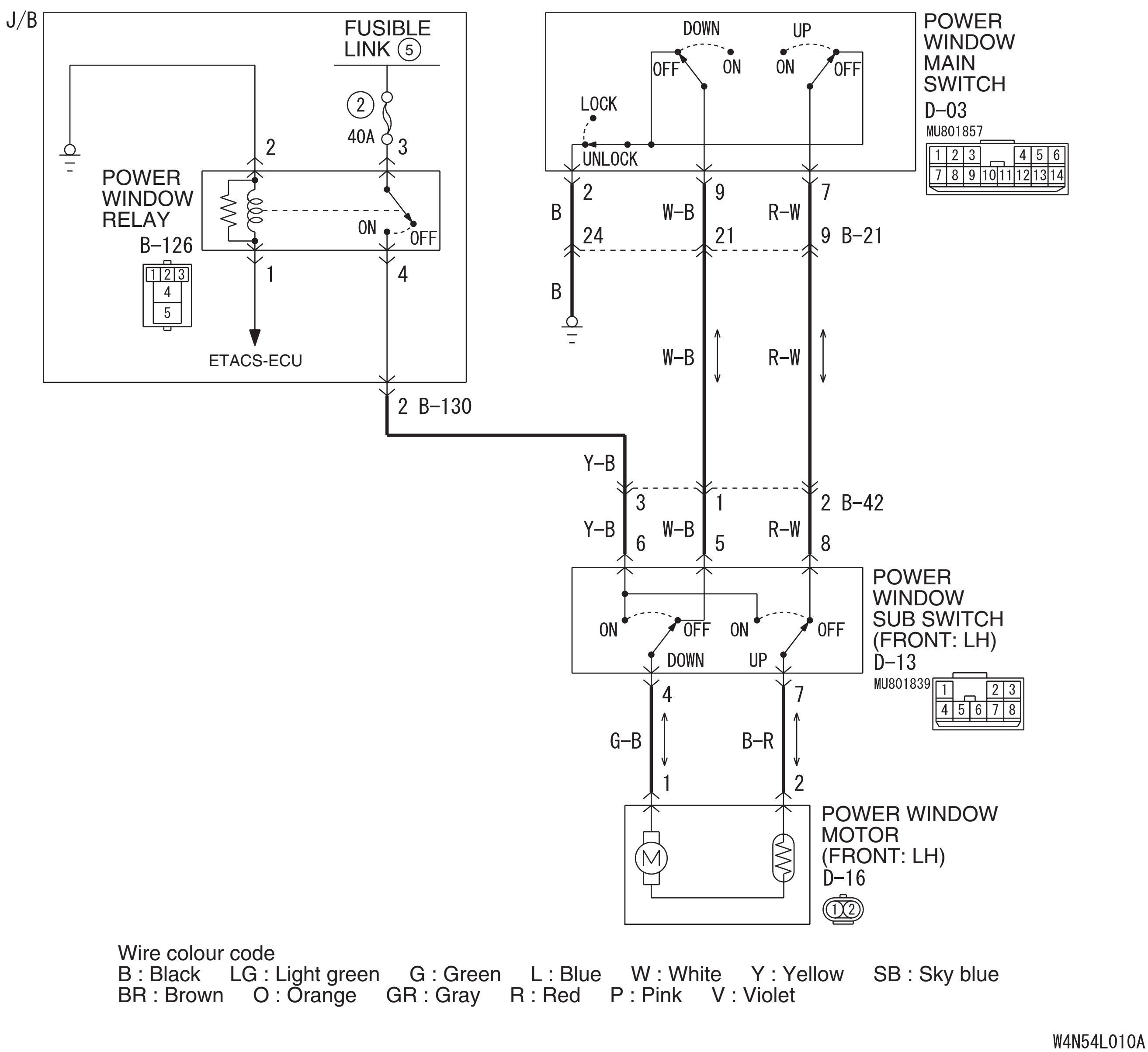
NO : Repair the wiring harness.

Inspection Procedure D-3: Relevant power window(s) do not work by means of the front and rear power window sub switches.

⚠ CAUTION

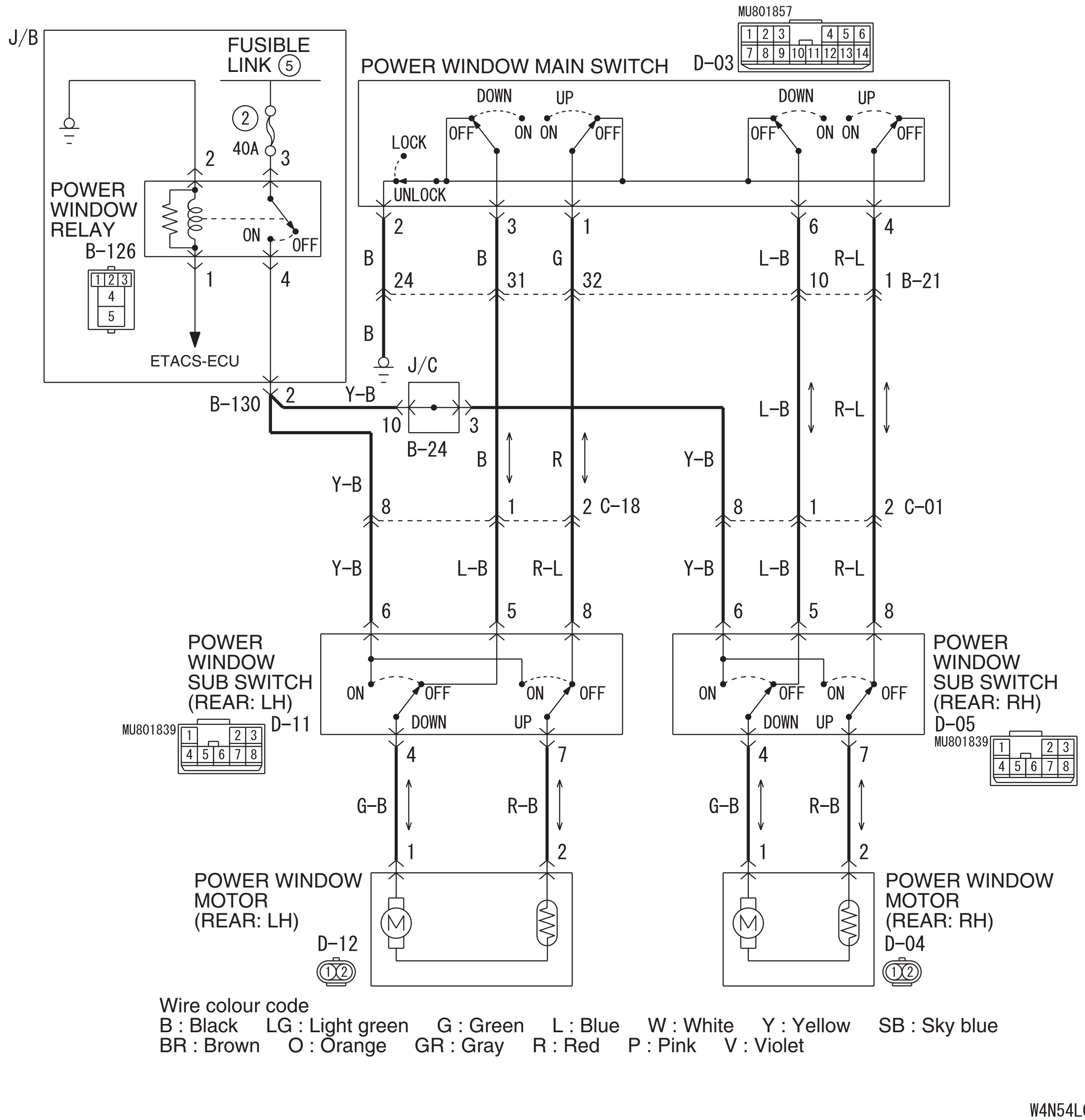
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Power Window Sub Switch (Front: LH) Circuit



Main Index
Group TOC

Power Window Sub Switch (Rear) Circuit



COMMENTS ON TROUBLE SYMPTOM

If the front passenger's or rear power window does not work by means of the respective power window sub switch, the power window sub switch or the power window motor may be defective.

POSSIBLE CAUSES

- Malfunction of the power window sub switch (front: LH), the power window sub switch (rear: RH) or the power window sub switch (rear: LH)
- Malfunction of the power window motor (front: LH), the power window motor (rear: RH) or the power window motor (rear: LH)
- Damaged harness wires and connectors

Main Index
Group TOC

DIAGNOSIS PROCEDURE

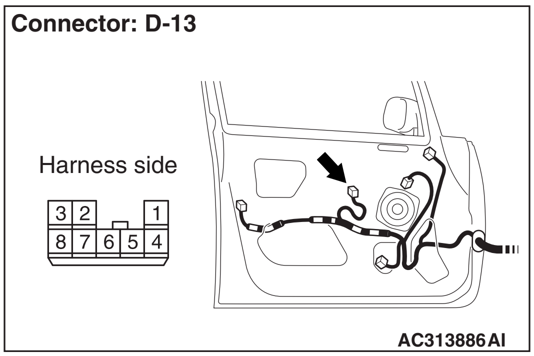
Step 1. Check the power window main switch.
Check that the power window lock switch is turned off.

Q: Is the check result normal?
- **YES :** Go to Step 2.
- **NO :** Turn off the power window lock switch.

Step 2. Determine a trouble spot.

Q: Which power window does not work?
- **Passenger's door :** Go to Step 3.
- **Rear right door :** Go to Step 10.
- **Rear left door :** Go to Step 17.

Step 3. Connector check: D-13 power window sub switch (front: LH) connector.

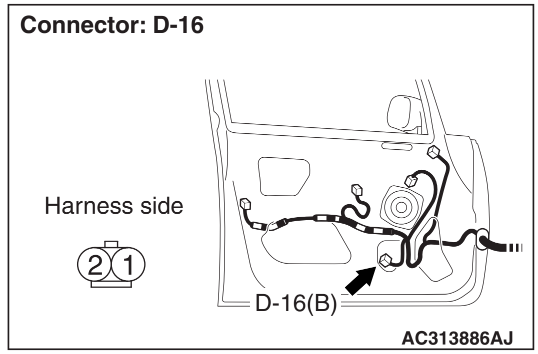


Q: Is the check result normal?
- **YES :** Go to Step 4.
- **NO :** Repair the connector.

Step 4. Check the power window sub switch (front: LH).
Refer to GROUP 42 – Door P.42-36.

Q: Is the check result normal?
- **YES :** Go to Step 5
- **NO :** Replace the power window sub switch (front: LH).

Step 5. Connector check: D-16 power window motor (front: LH) connector

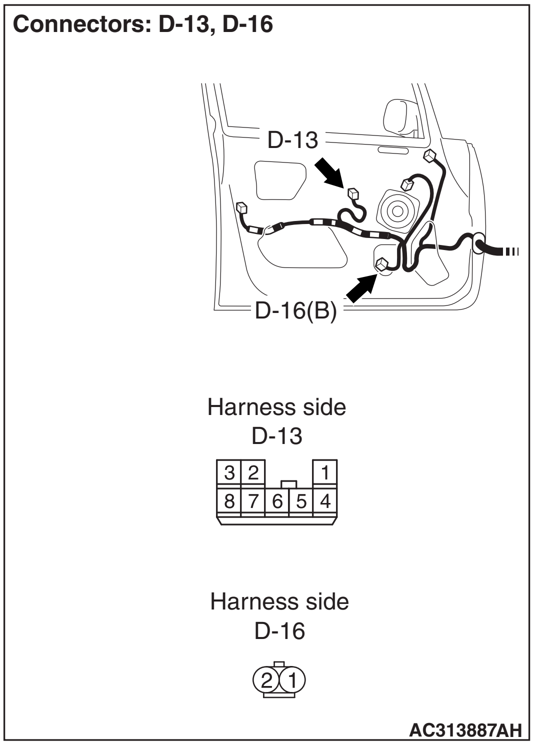


Q: Is the check result normal?
- **YES :** Go to Step 6.
- **NO :** Repair the connector.

Step 6. Check the power window motor (front: LH).
Refer to GROUP 42 – Door P.42-36.

Q: Is the check result normal?
- **YES :** Go to Step 7
- **NO :** Replace the power window motor (front: LH).

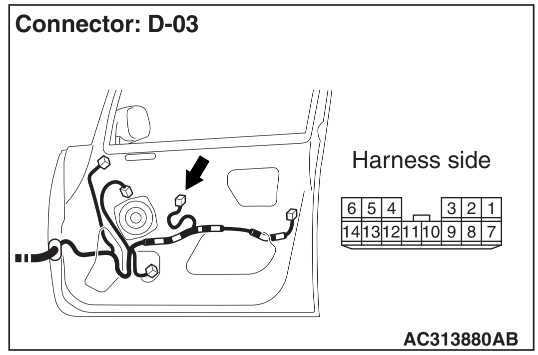
Step 7. Check the wiring harness from D-16 power window motor (front: LH) connector terminal Nos.1 and 2 to D-13 power window sub switch (front: LH) connector terminal Nos.4 and 7.

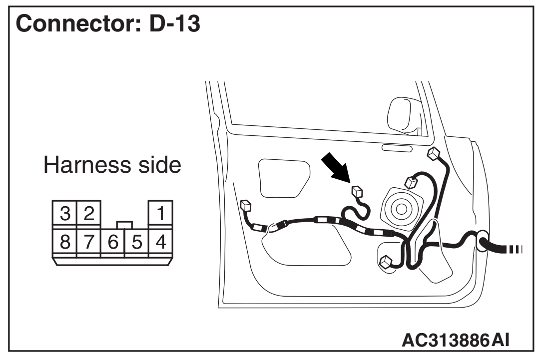


- Check the input and output lines for open or short circuit.

Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the wiring harness.

Step 8. Connector check: D-03 power window main switch connector and D-13 power window sub switch (front: LH) connector

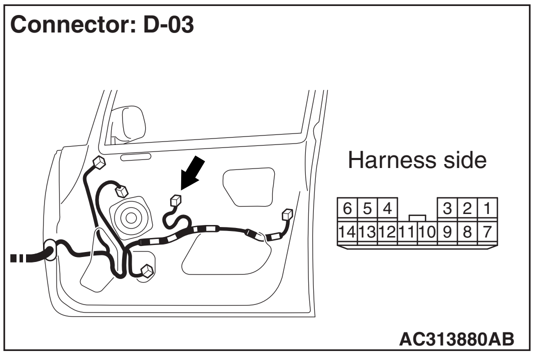


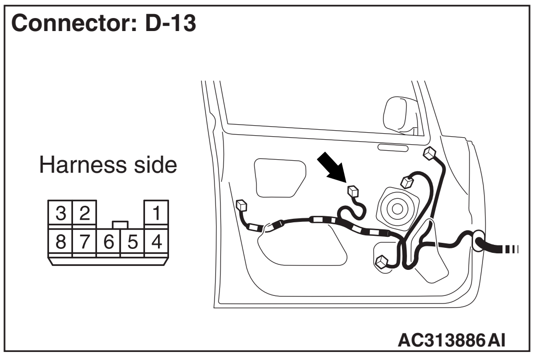


Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the connector.

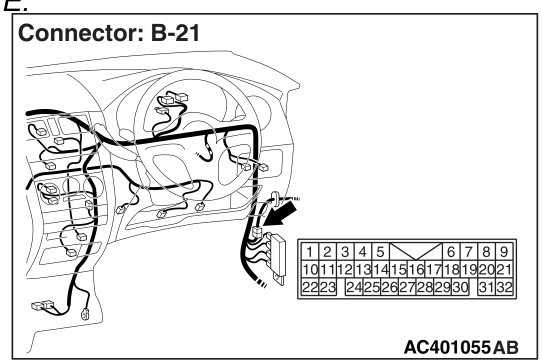
Main Index
Group TOC

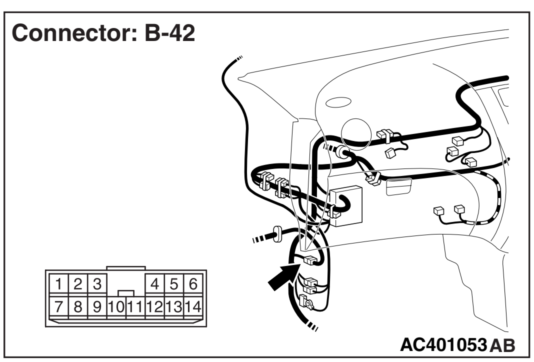
Step 9. Check the wiring harness from D-03 power window main switch connector terminal Nos.9 and 7 to D-13 power window sub switch (front: LH) connector terminal Nos.5 and 8.





NOTE:





Prior to the wiring harness inspection, check intermediate connectors B-21, B-42 and repair if necessary.

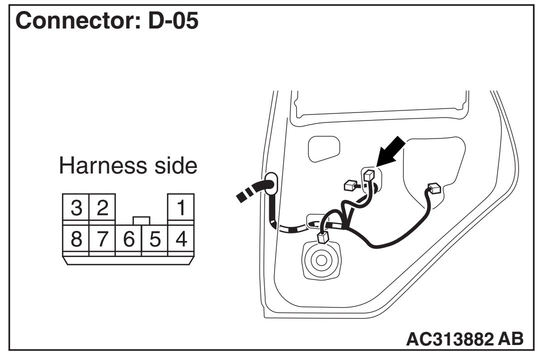
- Check the communication lines for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 10. Connector check: D-05 power window sub switch (rear: RH) connector.



Q: Is the check result normal?

YES : Go to Step 11.

NO : Repair the connector.

Step 11. Check the power window sub switch (rear: RH).

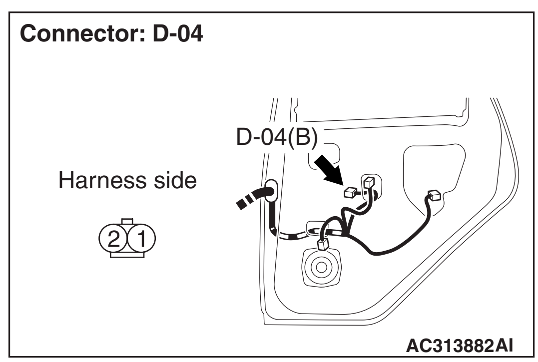
Refer to GROUP 42 – Door P.42-36.

Q: Is the check result normal?

YES : Go to Step 12

NO : Replace the power window sub switch (rear: RH).

Step 12. Connector check: D-04 power window motor (rear: RH) connector.



Q: Is the check result normal?

YES : Go to Step 13.

NO : Repair the connector.

Main Index
Group TOC

Step 13. Check the power window motor (rear: RH).

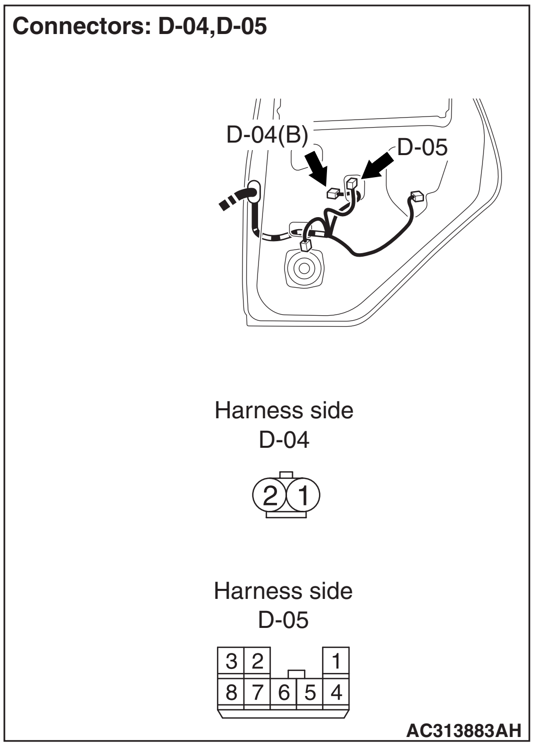
Refer to GROUP 42 – Door P.42-36.

Q: Is the check result normal?

YES : Go to Step 14

NO : Replace the power window motor (rear: RH).

Step 14. Check the wiring harness from D-04 power window motor (rear: RH) connector terminal Nos.1 and 2 to D-05 power window sub switch (rear: RH) connector terminal Nos.4 and 7.



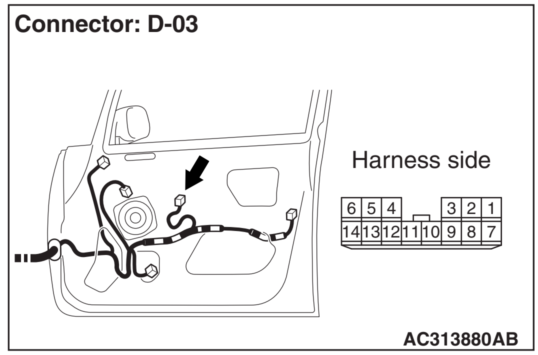
- Check the input and output lines for open or short circuit.

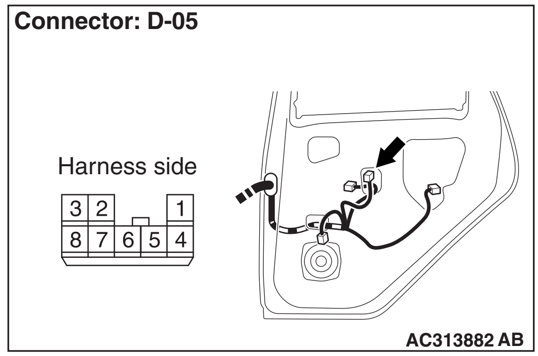
Q: Is the check result normal?

YES : Go to Step 15.

NO : Repair the wiring harness.

Step 15. Connector check: D-03 power window main switch connector and D-05 power window sub switch (rear: RH) connector





Q: Is the check result normal?

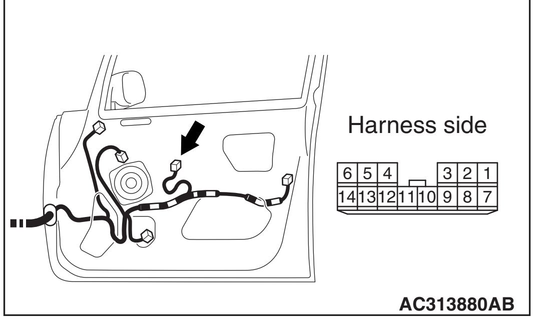
YES : Go to Step 16.

NO : Repair the connector.

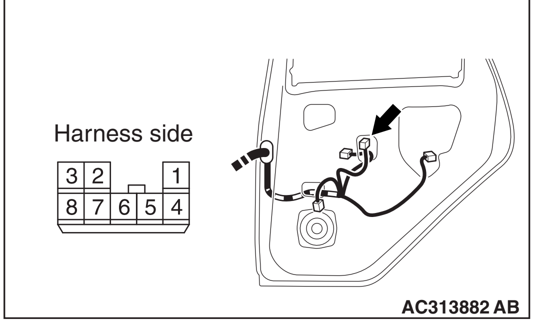
Main Index
Group TOC

Step 16. Check the wiring harness from D-03 power window main switch connector terminal Nos.6 and 4 to D-05 power window sub switch (rear: RH) connector terminal Nos.5 and 8.

Connector: D-03

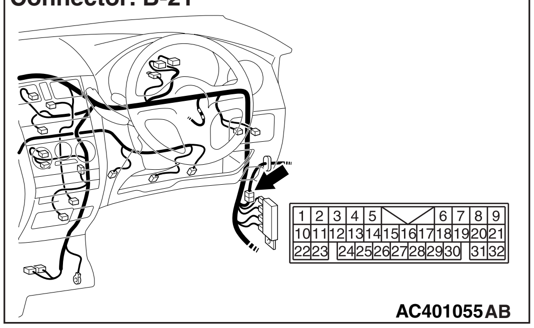


Connector: D-05

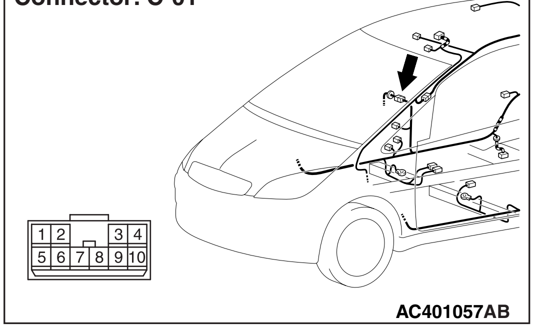


NOTE:

Connector: B-21



Connector: C-01



Prior to the wiring harness inspection, check intermediate connectors B-21, C-01, and repair if necessary.

- Check the communication lines for open circuit.

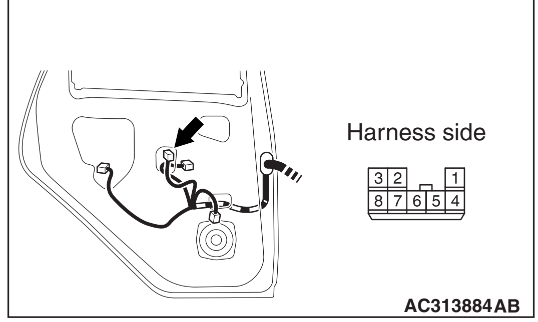
Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 17. Connector check: D-11 power window sub switch (rear: LH) connector.

Connector: D-11



Q: Is the check result normal?

YES : Go to Step 18.

NO : Repair the connector.

Step 18. Check the power window sub switch (rear: LH).

Refer to GROUP 42 – Door P.42-36.

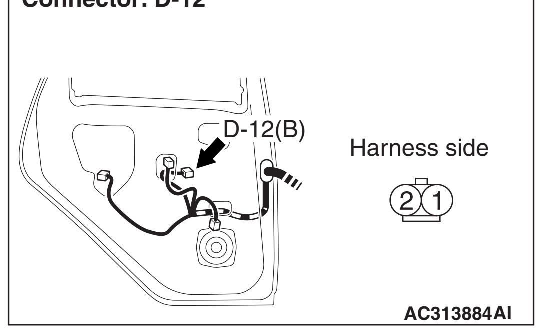
Q: Is the check result normal?

YES : Go to Step 19

NO : Replace the power window sub switch (rear: LH).

Step 19. Connector check: D-12 power window motor (rear: LH) connector.

Connector: D-12



Q: Is the check result normal?

YES : Go to Step 20.

NO : Repair the connector.

Main Index
Group TOC

Step 20. Check the power window motor (rear: LH).

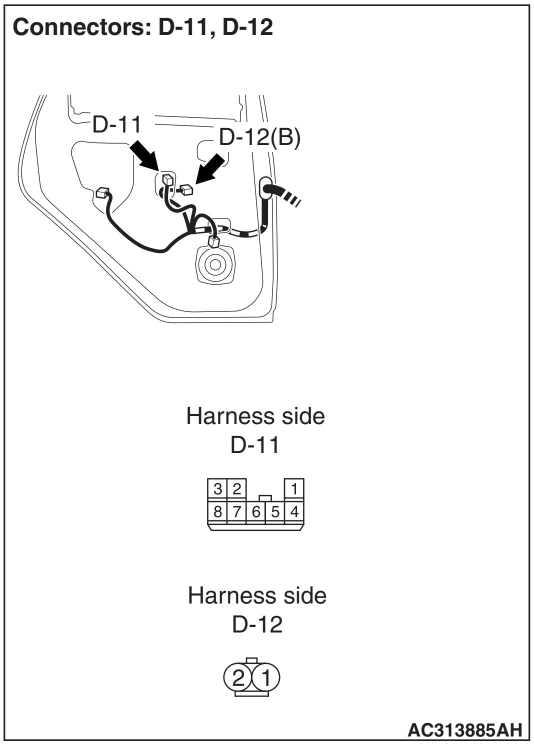
Refer to GROUP 42 – Door P.42-36.

Q: Is the check result normal?

YES : Go to Step 21

NO : Replace the power window motor (rear: LH).

Step 21. Check the wiring harness from D-12 power window motor (rear: LH) connector terminal Nos.1 and 2 to D-11 power window sub switch (rear: LH) connector terminal Nos.4 and 7.



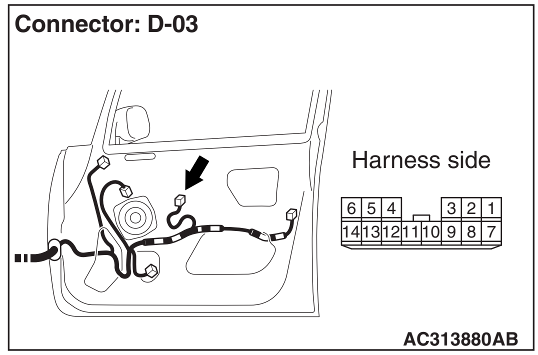
- Check the input and output lines for open or short circuit.

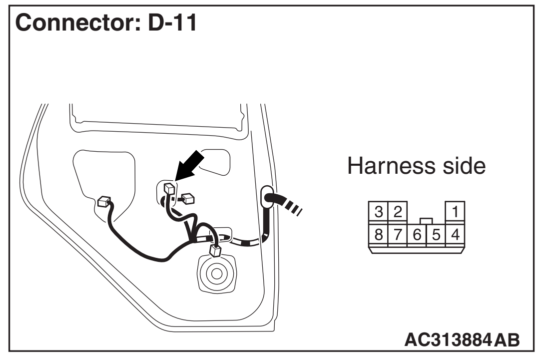
Q: Is the check result normal?

YES : Go to Step 22.

NO : Repair the wiring harness.

Step 22. Connector check: D-03 power window main switch connector and D-11 power window sub switch (rear: LH) connector





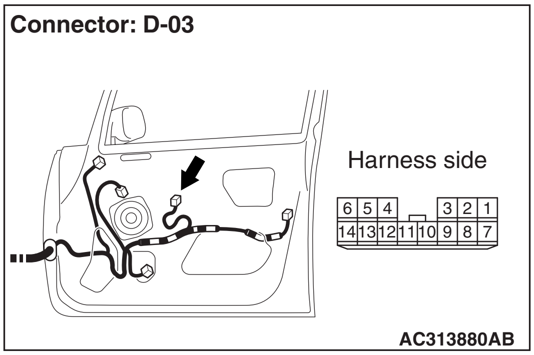
Q: Is the check result normal?

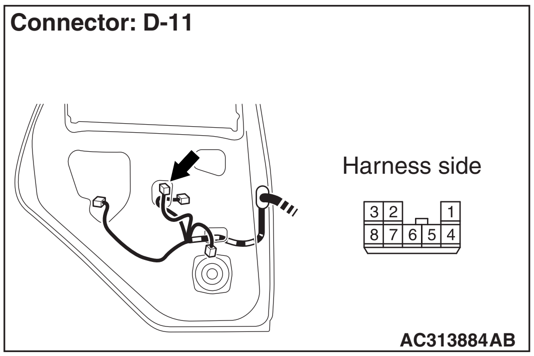
YES : Go to Step 23.

NO : Repair the connector.

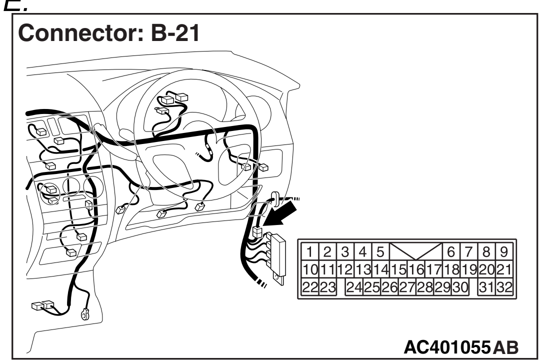
Main Index
Group TOC

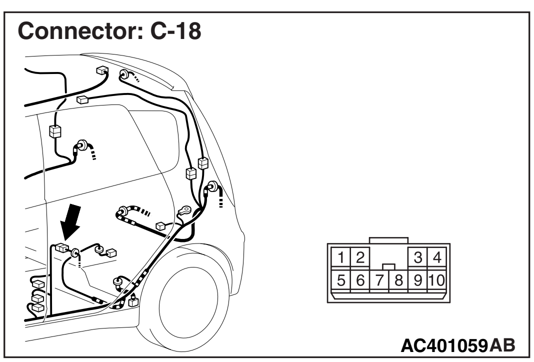
Step 23. Check the wiring harness from D-03 power window main switch connector terminal Nos.3 and 1 to D-11 power window sub switch (rear: LH) connector terminal Nos.5 and 8.





NOTE:





Prior to the wiring harness inspection, check intermediate connectors B-21, C-18, and repair if necessary.

- Check the communication lines for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

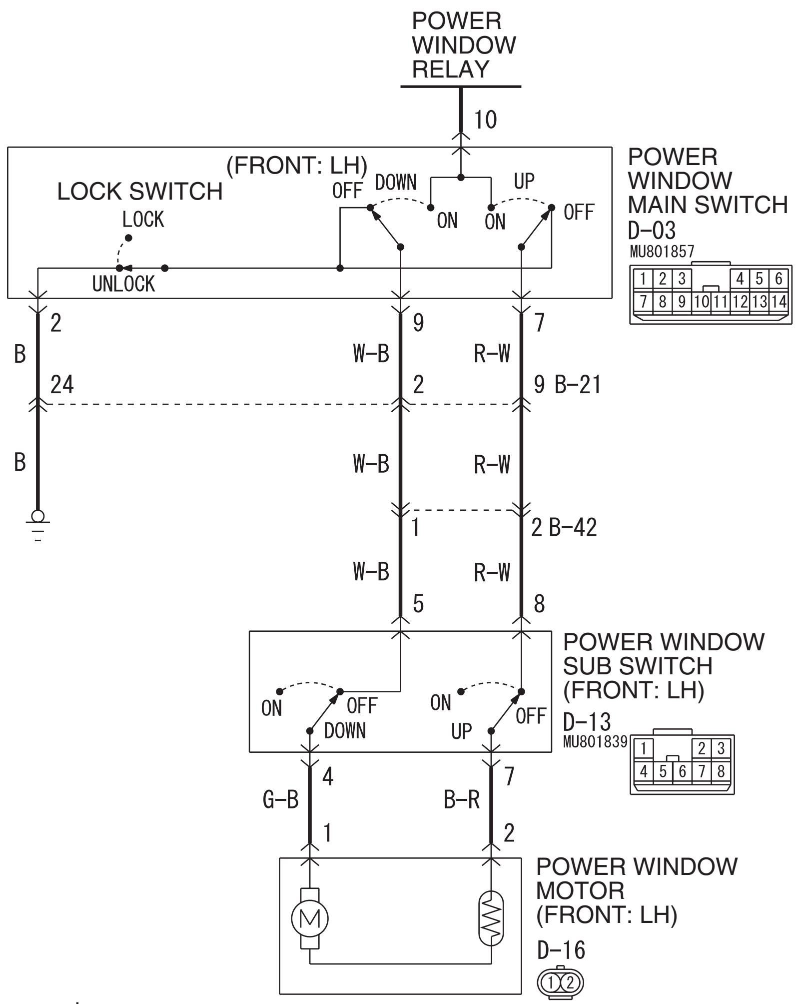
Main Index
Group TOC

Inspection Procedure D-4: Passenger's and/or rear power window(s) do not work by means of the power window main switch.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

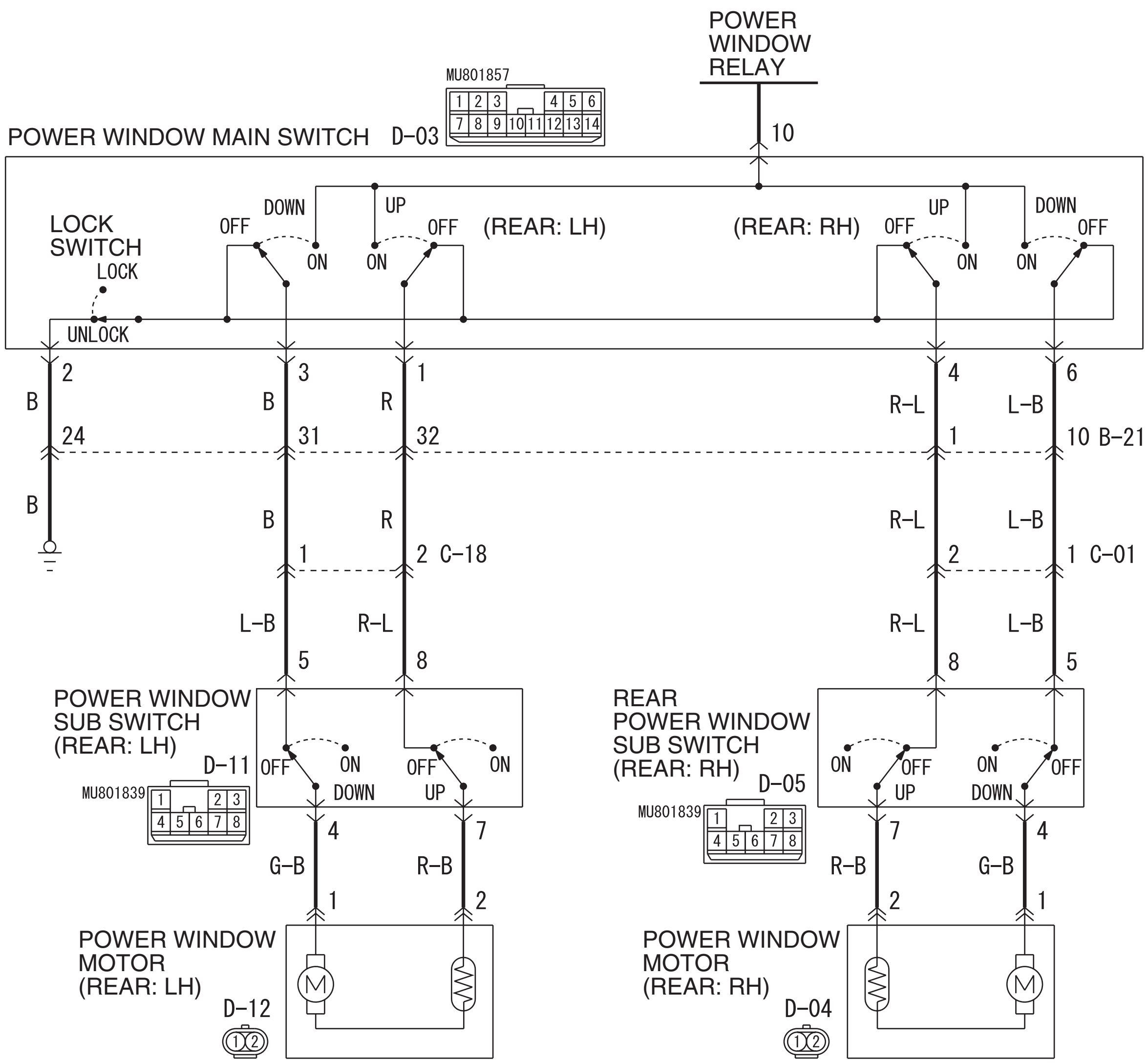
Power Window (Front: LH) Circuit



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4N54L012A

Power Window (Rear) Circuit



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4N54L013A

COMMENTS ON TROUBLE SYMPTOM

If the passenger's and/or rear power window does not work by means of the power window main switch, the power window main switch or the respective power window sub switch(es) may be defective.

POSSIBLE CAUSES

- Malfunction of the power window main switch
- Malfunction of the power window sub switch (front: LH), power window sub switch (rear: RH) or power window sub switch (rear: LH)
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the power window main switch.

Check that the driver's power window works by means of the power window main switch.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to Inspection Procedure D-2 "Driver's power window does not work by means of the power window main switch P.54C-68."

Main Index
Group TOC

Step 2. Check the power window sub switch.

Check that each power window works by means of the respective power window sub switch when the power window lock switch is turned off.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Refer to Inspection Procedure D-3 "Relevant power window(s) do not work by means of the front and rear power window sub switches P.54C-71."

Step 3. Retest the system.

Check that the rear left power window works by means of the power window main switch.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the power window main switch.

Inspection Procedure D-5: The power window timer function does not work normally.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the power window timer function does not work normally, these input signal circuit(s), the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the driver's door switch
- Malfunction of the passenger's door switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSTIC PROCEDURE

Step 1. ECU check by using the SWS monitor

Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: ON

ECU TO BE CHECKED

- ETACS ECU

OK: "OK" is displayed on the "ETACS ECU" menu.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Step 2. SWS monitor data list

Check the SWS communication signal, which are related to the power window timer function.

<Selected item> ETACS ECU

- Turn the ignition switch from the ON to the OFF position.
- Driver's door: open

Item No.	Item name	Normal condition
Item 30	IG SW IG1	OFF
Item 32	DR DOOR SW	ON

OK: Normal conditions are displayed for all the items.

Q: Are the check results normal?

Normal conditions are displayed for all the items. : Go to Step 3.

Normal condition is not displayed for item No.30 : Refer to inspection procedure N-2 "The ignition switch (IG1) signal is not received P.54C-203."

Normal condition is not displayed for item No.32 : Refer to inspection procedure N-3 "The driver's door switch signal is not received P.54C-205."

Main Index
Group TOC

Step 3. ETACS switch data by using the SWS monitor

Check the SWS communication signal, which are related to the power window timer function.

- Passenger's door: Close → Open

Item No.	Item name	Normal condition
Item 05	PASS DOOR SW	from OFF to ON

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : Go to Step 4.

NO : Refer to inspection procedure N-14 "The passenger's door switch signal is not received P.54C-234."

Step 4. Retest the system

Check that the power window timer function works normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the power window main switch.

Inspection Procedure D-6: The window glass lowers automatically while it is rising.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the sliding resistance is too great when the window is being raised or the window glass encounters an object, the window glass will lower by approximately 150 mm.

POSSIBLE CAUSES

- Improper adjusted door window glass
- Incorrectly installed or warped glass slider
- Malfunction of the power window motor
- Malfunction of the window regulator

DIAGNOSIS PROCEDURE

Step 1. Check the power window operating current.

Check that the power window operating current is normal (Refer to GROUP 42 – Door – On-vehicle service P.42-35).

Q: Is the check result normal?

YES : Adjust the door window glass (Refer to GROUP 42 – Door – On-vehicle service P.42-34), and then go to Step 2.

NO : Replace the defective power window motor assembly which operating current are abnormal.

Step 2. Check that the door window glasses are installed correctly.

Check that the door window glasses are installed correctly. Refer to GROUP 42 – Door – On-vehicle Service P.42-34.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Adjust the door window glass (Refer to GROUP 42 – Door – On-vehicle service P.42-34).

Step 3. Retest the system.

Check that the power window does not lower automatically while it is being raised.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the power window motor assembly of the defective window.

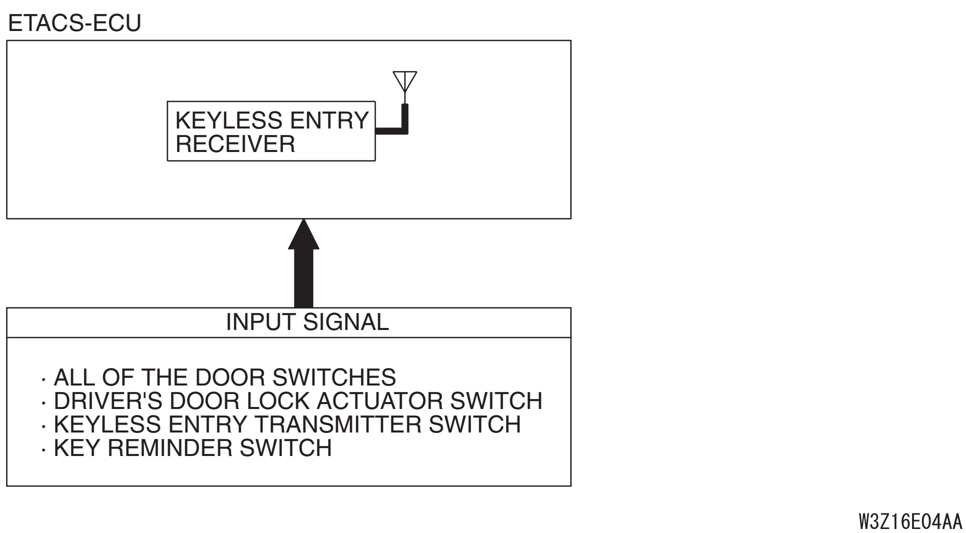
Main Index
Group TOC

KEYLESS ENTRY SYSTEM

INSPECTION PROCEDURE E-1: Keyless entry system does not work.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Keyless Entry System Function Circuit



COMMENTS ON TROUBLE SYMPTOM

If the keyless entry system does not work normally, the input signal circuits to the components below or the ETACS-ECU may be defective.

- Key reminder switch
- All of the door switches
- Keyless entry transmitter
- Driver's door lock actuator

POSSIBLE CAUSES

- Malfunction of the key reminder switch
- Malfunction of the door switches
- Malfunction of the keyless entry transmitter
- Malfunction of the driver's door lock actuator
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSTIC PROCEDURE

Step1. ECU check by using the SWS monitor

Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

ECU TO BE CHECKED

- ETACS ECU

OK: "OK" is displayed on the "ETACS ECU" menu.

Q: Is the check result normal?

YES : Go to Step2.
NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Main Index
Group TOC

Step2. Use the SWS monitor to examine the keyless entry system for signal reception.

Check the condition of the keyless entry transmitter.

Operation switch	Normal conditions (received signal)
LOCK	LOCK
UNLOCK	UNLOCK

OK: By operating the switch as shown in the table above, relevant normal conditions are displayed.

Q: Are normal conditions displayed?

YES : Go to Step3.

NO : Refer to Inspection Procedure N-12 "Each switch signal of the keyless entry transmitter is not received P.54C-229."

Step 3. SWS monitor data list

Check the SWS communication input signal, which are related to the keyless entry system.

<Selected item> ETACS

- Each door: Closed to open

Item No.	Item name	Normal condition
Item 40	ALL DOOR SW	from OFF to ON

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : Go to Step 4.

NO : Refer to inspection procedure N-10 "All the door switch signals are not received P.54C-222."

Step4. Retest the system.

Check the keyless entry system works normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE E-2: Keyless Entry hazard lamp answerback function or the Room Lamp Answerback Function does not Work Normally.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the hazard warning lamp and the room lamp work normally, the ETACS-ECU may be defective. Alternatively, it is possible that the keyless entry hazard lamp answerback function was disabled by the customisation function.

POSSIBLE CAUSES

- Malfunction of the turn-signal lamp
- Malfunction of the room lamp
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Customize function by using the SWS monitor

Check that "KEYLESS (HAZARD)" is set to "LOCK/UNLOCK", "LOCKED" or "UNLOCKED" by using the adjustment function.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Set "KEYLESS (HAZARD)" to "LOCK/UNLOCK", "LOCKED" or "UNLOCKED" by using the adjustment function. Refer to P.54C-240.

Main Index
Group TOC

Step 2. Check the operation of the hazard warning lamp.

Check that the hazard warning lamps illuminate normally.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Refer to inspection procedure L-2 "The hazard warning lamps do not illuminate P.54C-173."

Step 3. Check the operation of the room lamps.

Check that the room lamps illuminate normally.

Q: Is the check result normal?

YES : Go to Step 4.

NO : Refer to inspection procedure M-2 "The room lamp does not illuminate normally P.54C-191."

Step 4. ECU check by using the SWS monitor

Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

ECU TO BE CHECKED

- ETACS ECU

OK: "OK" is displayed on the "ETACS ECU" menu.

Q: Is the check result normal?

YES : Go to Step 5.

NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Step 5. Retest the system.

Check that the keyless entry hazard lamp answerback function or the room lamp answerback function work normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

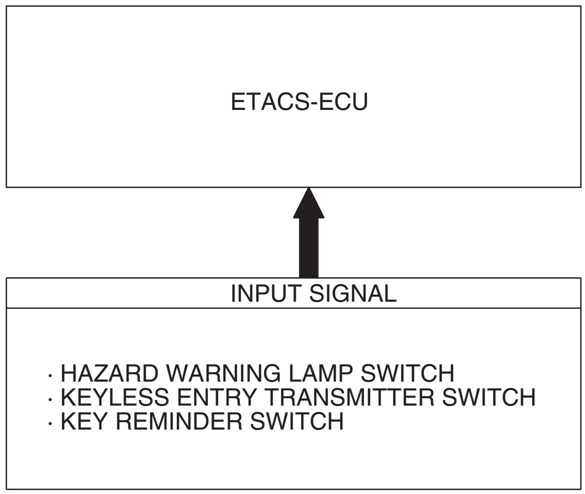
NO : Replace the ETACS-ECU.

Main Index
Group TOC

INSPECTION PROCEDURE E-3: Encrypted Code cannot be Registered.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Encrypted Transmitter Code Register Mode



COMMENTS ON TROUBLE SYMPTOM

If the encrypted code registration mode is not entered, the key reminder switch, the hazard warning lamp switch or the ETACS-ECU may be defective. If the registration is not possible although the registration mode is entered, the keyless entry transmitter or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the keyless entry transmitter
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the encrypted code registration mode.

Check that the encrypted code registration mode is entered.

Q: Is the check result normal?

YES : Go to Step 2.
NO : Go to Step 3.

Step2. Use the SWS monitor to examine the keyless entry system for signal reception.

Check the condition of the keyless entry transmitter.

Operation switch	Normal conditions (received signal)
LOCK	LOCK
UNLOCK	UNLOCK

OK: By operating the switch as shown in the table above, relevant normal conditions are displayed.

Q: Are the check result normal?

YES : Go to Step3.
NO : Refer to Inspection Procedure N-12 "Each switch signal of the keyless entry transmitter is not received P.54C-229."

Main Index
Group TOC

Step3. Retest the system.

Check that the encrypted code can be registered.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE E-4: Multi-mode keyless entry system function does not work at all.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the electric-folding door mirrors work normally, the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Malfunction of the keyless entry transmitter

Step 1. Check the keyless entry transmitter.

Check that the keyless entry system works normally.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to Inspection Procedure E-1 "Keyless entry system does not work P.54C-84."

Step 2. Check the electric retractable remote controlled door mirror.

Check that the electric retractable remote controlled door mirror works normally.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Refer to inspection procedure H-1 "Electric retractable remote controlled door mirror does not work at all P.54C-122."

Step 3. ECU check on the SWS monitor.

Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: ACC

ECU TO BE CHECKED

- ETACS ECU

OK: "OK" is displayed on the "ETACS ECU" menu.

Q: Is the check result normal?

YES : Go to Step 4.

NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Step 4. Use the SWS monitor to examine the keyless entry system for signal reception.

Check the condition of the keyless entry transmitter.

Operation switch	Normal conditions (received signal)
LOCK (1 second or more)	LOCK
	LCK LNG PUSH
UNLOCK (1 second or more)	UNLOCK
	ULCK LNG PUSH

OK: By operating the switch as shown in the table above, relevant normal conditions are displayed.

Q: Is the check result normal?

YES : Go to Step 5.

NO : Refer to inspection procedure N-12 "Each switch signal of the keyless entry transmitter is not received P.54C-229."

Main Index
Group TOC

Step 5. SWS monitor data list

Check the SWS communication signal, which is related to the multi-mode keyless entry system.

<Selected item> ETACS ECU

- Ignition switch: OFF
- Operate the multi-mode function with the keyless entry transmitter.

Item No.	Item name	Normal condition
Item 30	IGNITION SW IG1	OFF
Item 34	KEYLESS ENTRY	MULTI CLOSE, MULTI OPEN or MULTI STOP

OK: Normal conditions displayed for all the items

Q: Are the check result normal?

Normal conditions are displayed for all the items. :
Go to Step 6.

Normal condition is not displayed for item No.30 :
Refer to inspection procedure N-2 "The ignition switch (IG1) signal is not received P.54C-203."

Normal condition is not displayed for item No.34 :
Replace the ETACS-ECU.

Step 6. Retest the system.

Check that the multi-mode keyless entry system works normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the power window main switch.

Main Index
Group TOC

INSPECTION PROCEDURE E-5: The Timer Lock Function does not Work after the Doors have been Unlocked by the Keyless Entry System.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENT ON TROUBLE SYMPTOM

If the keyless entry timer lock does not work normally, the input signal circuit(s) to the keyless entry transmitter or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the keyless entry transmitter
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the operation of the keyless entry system.

Check that the keyless entry system works normally.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to inspection procedure E-1 "Keyless entry system does not work P.54C-84."

Step 2. Customize function by using the SWS monitor.

"KEYLESS LOCK T" is set to one of the followings by using SWS monitor customisation function. Check that the timer lock is activated according to the setting.

- 30s
- 60s
- 120s
- 180s

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

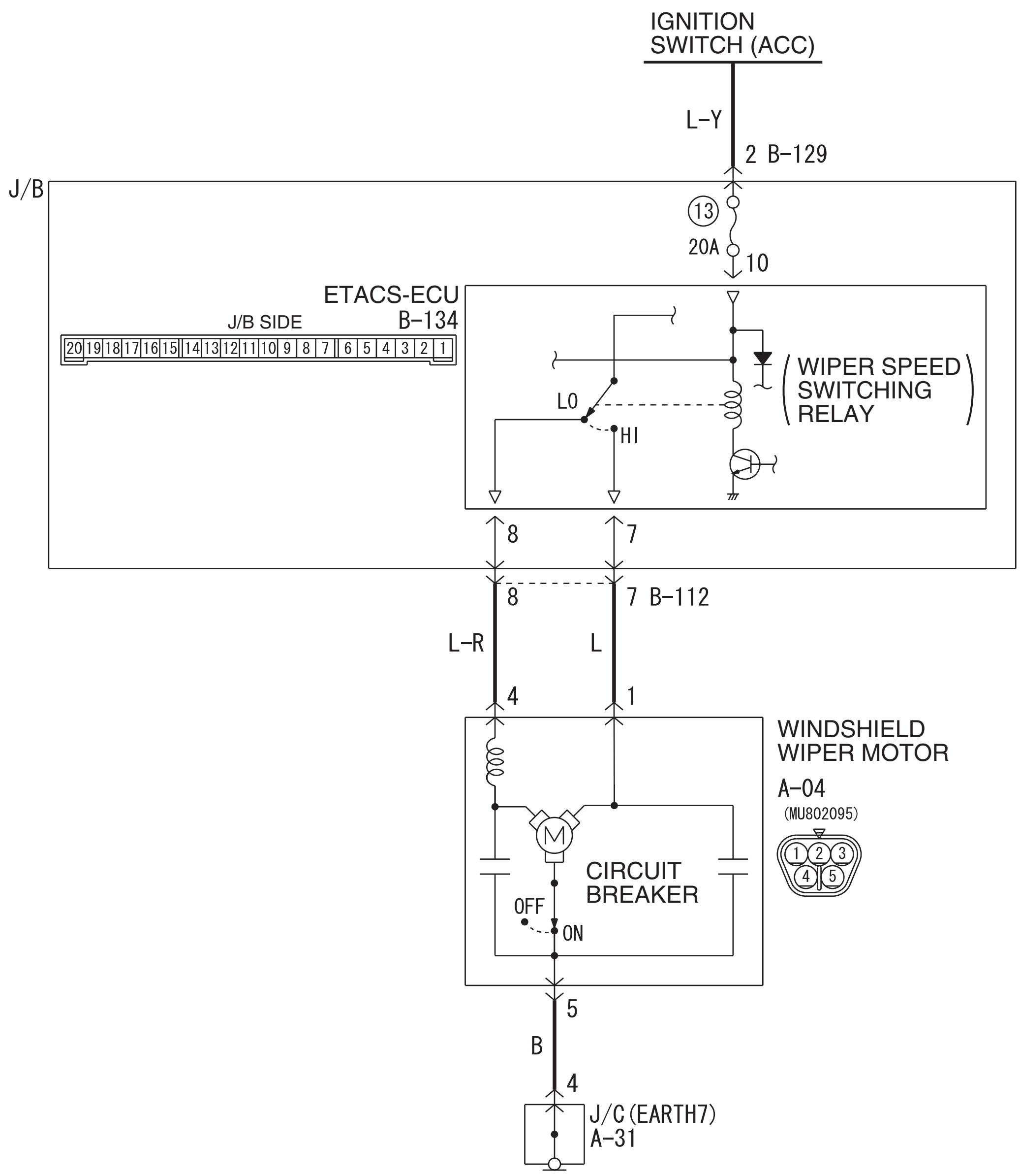
Main Index
Group TOC

WINDSHIELD WIPER AND WASHER

INSPECTION PROCEDURE F-1: The windshield wipers do not work at all.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Windshield Wiper Power Supply Circuit



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4N54L016A

Main Index
Group TOC

COMMENTS ON TROUBLE SYMPTOM

The windshield wiper motor, the column switch or the ETACS-ECU may be defective. If a problem is found in the ECU check by using the SWS monitor, also check the wiper backup circuit (between B-135 column switch connector terminal No.8 and B-133 ETACS-ECU connector terminal No.64) and repair if necessary.

POSSIBLE CAUSES

- Malfunction of the windshield wiper motor
- Malfunction of the column switch (column-ECU)
- Malfunction of the ETACS ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. ECU check by using the SWS monitor.

Check that the power supply and earth lines to the column switch (column-ECU) and the ETACS-ECU and the SWS communication lines are normal.

- Turn the ignition switch to the ON position.

ECU TO BE CHECKED

- COLUMN ECU
- ETACS-ECU

OK: "OK" are displayed for all the items

Q: Are the check results normal?

"OK" is displayed for all the items : Go to Step 2.

"NG" is displayed on the "COLUMN ECU" menu. : Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-37."

"NG" is displayed on the "ETACS ECU" menu. : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Step 2. Function diagnosis by using the SWS monitor.

Check the SWS communication signal, which are related to the windshield wiper function.

<Selected item> F.WIPER INT

- Turn the ignition switch to the ACC position.
- Windshield wiper switch: INT

Item No.	Item name	Normal condition
Item 05	INT WIPER SW	ON
Item 31	IGNITION SW ACC	ON

OK: Normal conditions are displayed for all the items.

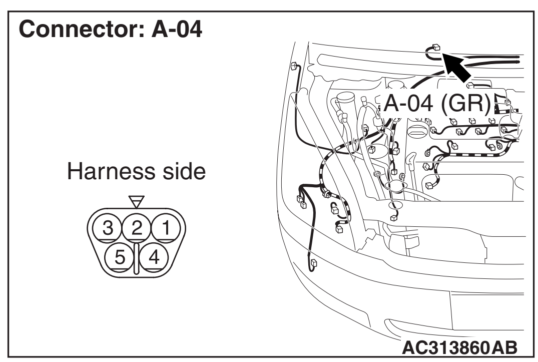
Q: Are the check results normal?

Normal conditions displayed for all the items : Go to Step 3.

Normal condition is not displayed for item No.05 : Replace the column switch.

Normal condition is not displayed for item No.31 : Refer to inspection procedure N-1 "The ignition switch (ACC) signal is not received P.54C-201."

Step 3. Connector check: A-04 windshield wiper motor connector.



Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair the connector.

Step 4. Check the windshield wiper motor assembly.

Refer to GROUP 51 – Windshield wiper P.51-31.

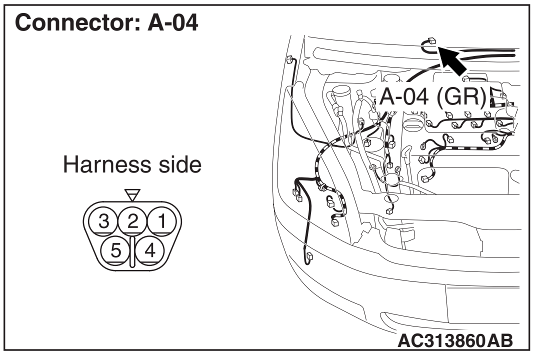
Q: Is the check result normal?

YES : Go to Step 5

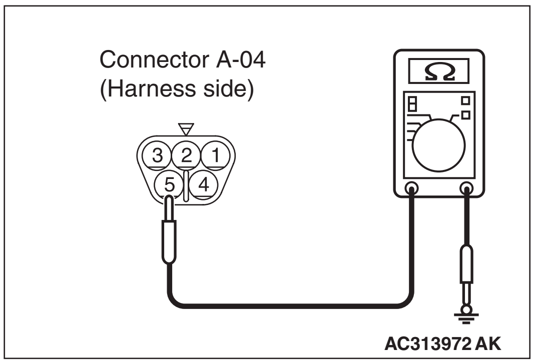
NO : Replace the windshield wiper motor assembly.

Main Index
Group TOC

Step 5. Resistance measurement at the A-04 windshield wiper motor connector.



(1) Disconnect the connector, and measure at the wiring harness side.



(2) Continuity between A-04 windshield wiper motor connector terminal No.5, and body earth

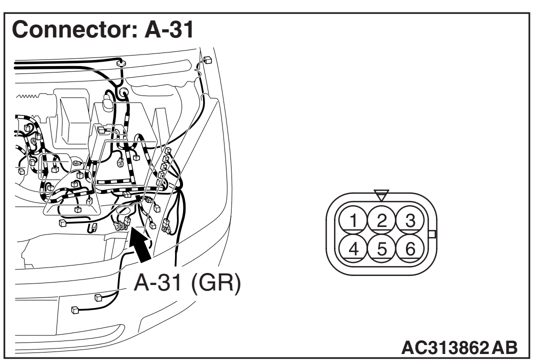
OK: Continuity exists (2 Ω or less)

Q: Is the check result normal?

YES : Go to Step 8.

NO : Go to Step 6.

Step 6. Connector check: A-31 earth connector.

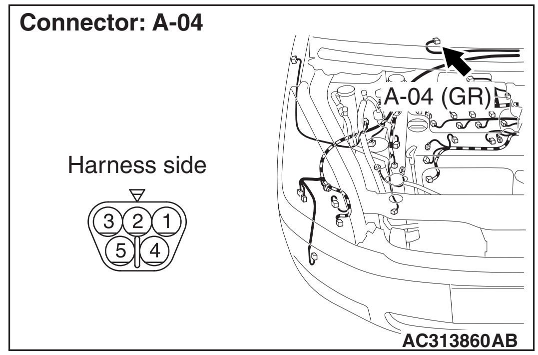


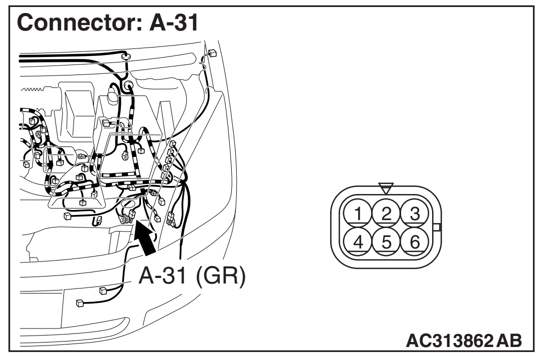
Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the connector.

Step 7. Check the wiring harness between A-04 windshield wiper motor connector terminal No.5 to A-31 earth connector terminal No.5.





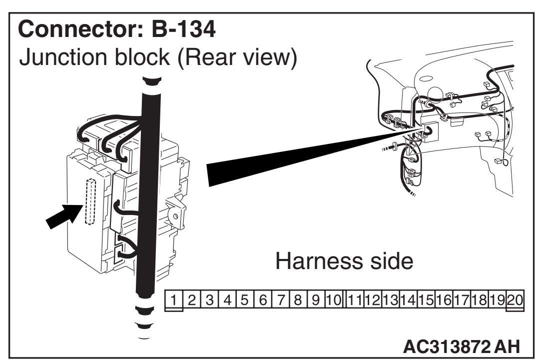
- Check the earth wires for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 8. Connector check: B-134 ETACS-ECU connector.



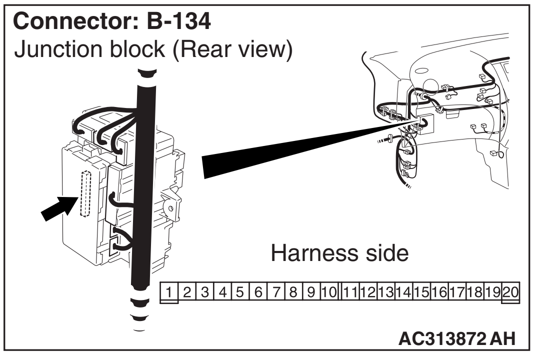
Q: Is the check result normal?

YES : Go to Step 9.

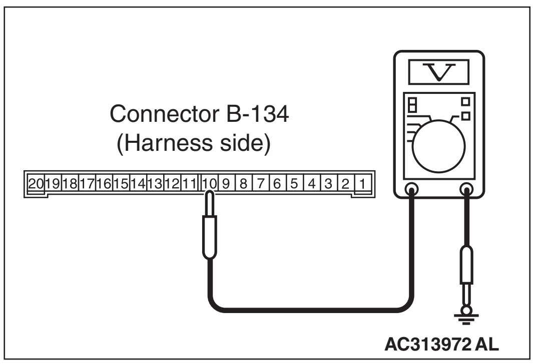
NO : Repair the connector.

Main Index
Group TOC

Step 9. Voltage measurement at the B-134 ETACS-ECU connector.



(1) Remove the ETACS-ECU, and measure at the relay box side.
(2) Ignition switch: ACC



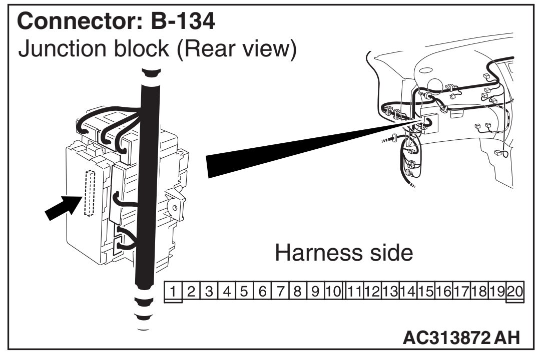
(3) Check the voltage between the B-134 ETACS-ECU connector terminal No.10 and body earth.

OK: System voltage

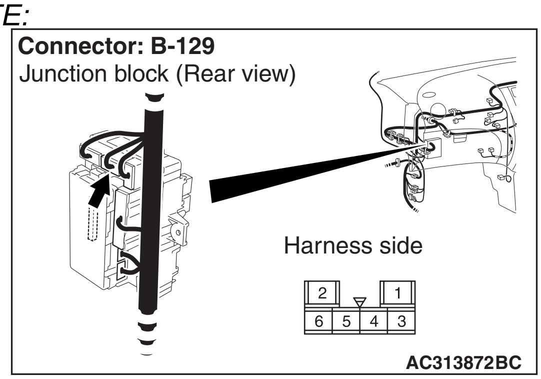
Q: Is the check result normal?

YES : Go to Step 11.
NO : Go to Step 10.

Step 10. Check the wiring harness between B-134 ETACS-ECU connector terminal No.10 to the ignition switch (ACC).



NOTE:



Prior to the wiring harness inspection, check the junction block connectors B-129 and repair if necessary.

- Check the power supply line to the ignition switch (ACC) for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Repair the wiring harness.

Step 11. Retest the system.

The windshield wiper should now work normally at all.

Q: Is the check result normal?

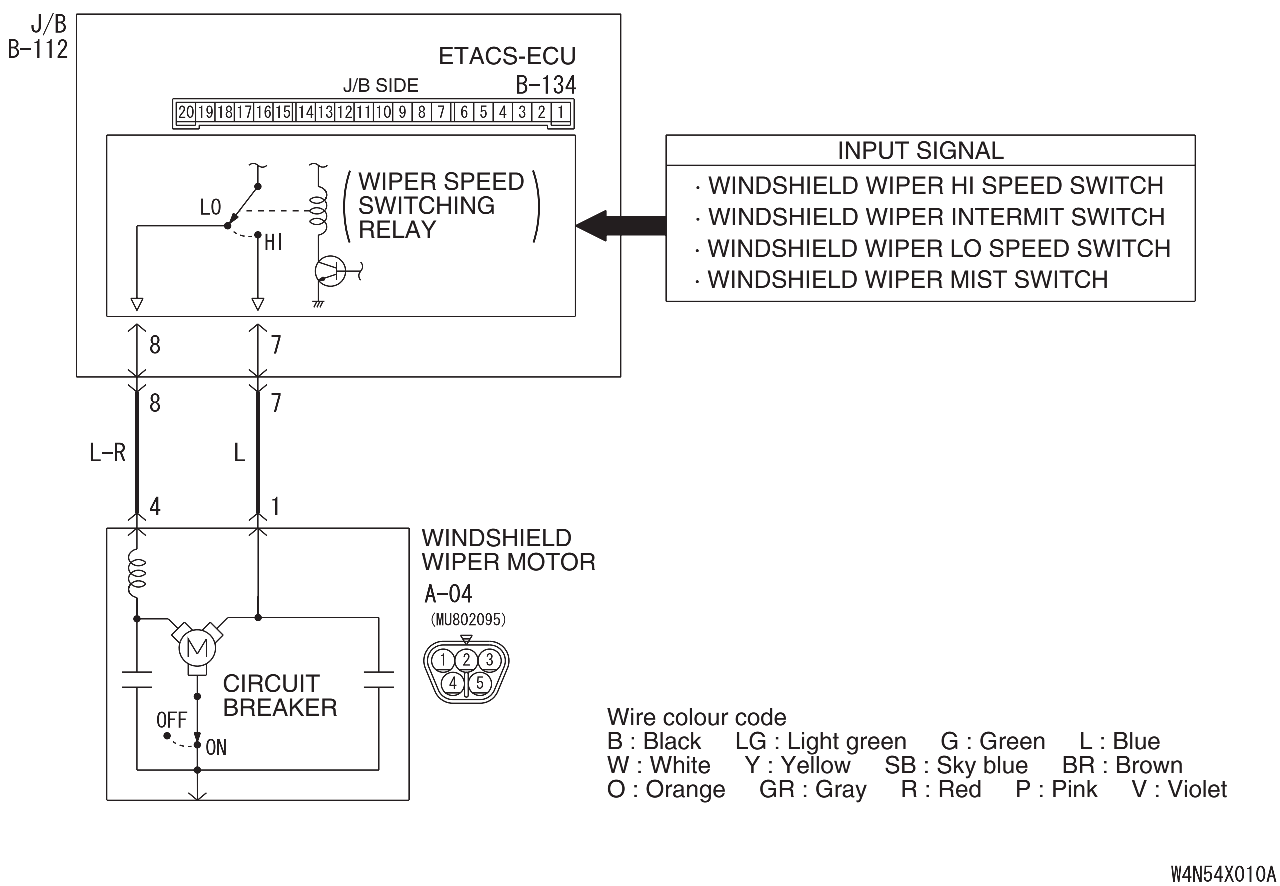
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Replace the ETACS-ECU.

Main Index
Group TOC

INSPECTION PROCEDURE F-2: The windshield wipers does not work when the wiper switch is at "INT", "WASHER" or "MIST" position. However, the wipers work at low speed when the switch is at "LO" and "HI" position.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Windshield Wiper Motor Drive Circuit



COMMENTS ON TROUBLE SYMPTOM

The system may be at fail-safe mode as the SWS communication line is defective. If the ETACS-ECU does not receive the ignition switch (ACC) signal due to an open circuit in the SWS communication lines or other reasons when the ignition switch is at the ACC position, the system will enter the fail-safe mode.

POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

Main Index
Group TOC

Step 1. ECU check by using the SWS monitor.

Check that the power supply and earth lines to the column switch (column-ECU) and the ETACS-ECU and the SWS communication lines are normal.

- Turn the ignition switch to the ON position.

ECU TO BE CHECKED

- COLUMN ECU
- ETACS-ECU

OK: "OK" are displayed for all the items

Q: Are the check results normal?

"OK" is displayed for all the items : Go to Step 2.

"NG" is displayed on the "COLUMN ECU" menu. : Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-37."

"NG" is displayed on the "ETACS ECU" menu. : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Step 2. Retest the system.

The windshield wiper should now work normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

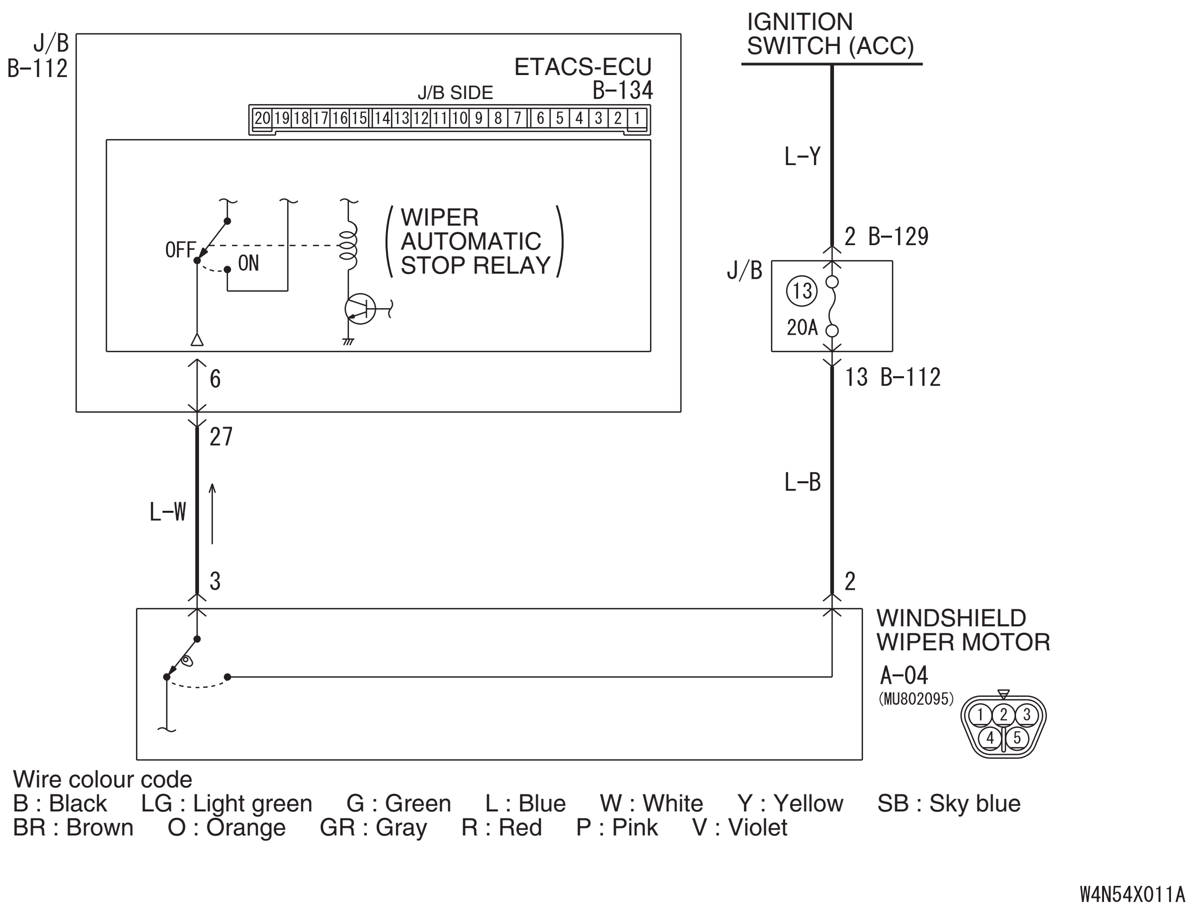
NO : Replace the ETACS-ECU.

Main Index
Group TOC

INSPECTION PROCEDURE F-3: The windshield wipers do not stop at the specified park position.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Windshield Wiper Automatic Stop Relay Circuit



COMMENTS ON TROUBLE SYMPTOM

The windshield wiper motor or the ETACS-ECU may be defective.

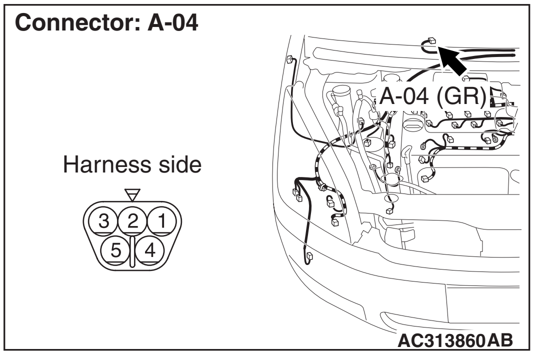
POSSIBLE CAUSES

- Malfunction of the windshield wiper motor
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

Main Index
Group TOC

DIAGNOSIS PROCEDURE

Step 1. Connector check: A-04 windshield wiper motor connector.



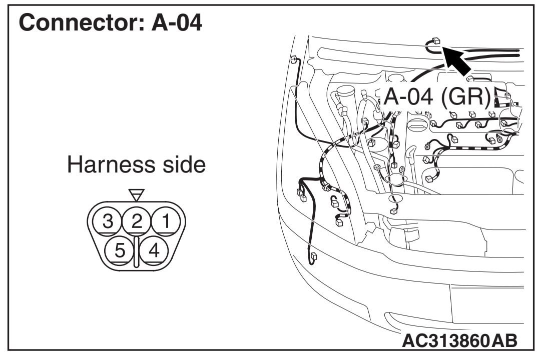
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the connector.

Step 2. Check the windshield wiper motor assembly.

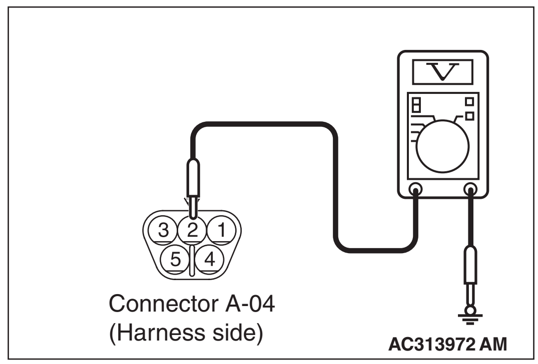
Refer to GROUP 51 – Windshield wiper P.51-31.

Q: Is the check result normal?
YES : Go to Step 3
NO : Replace the windshield wiper motor assembly.

Step 3. Voltage measurement at the A-04 windshield wiper motor connector.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Ignition switch: ACC



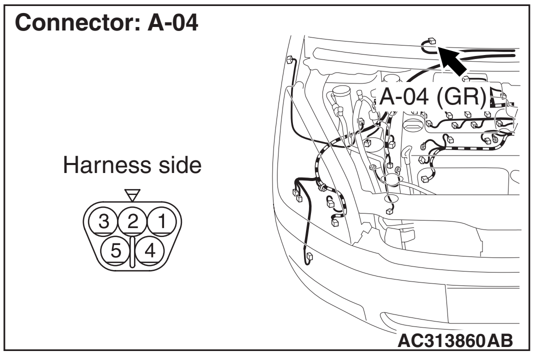
(3) Check the voltage between the A-04 windshield wiper motor connector terminal No.2 and body earth.

OK: System voltage

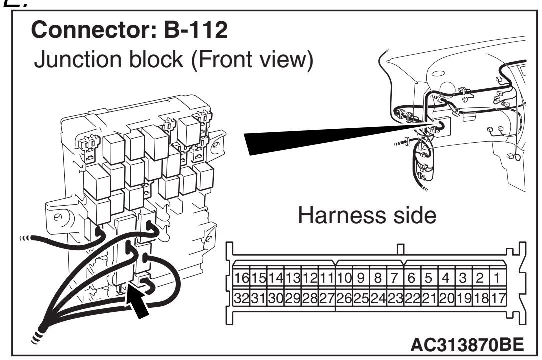
Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

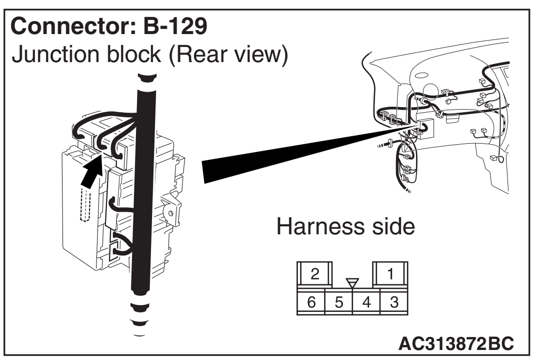
Main Index
Group TOC

Step 4. Check the wiring harness between A-04 windshield wiper motor connector terminal No.2 to ignition switch (ACC).



NOTE:





Prior to the wiring harness inspection, check the junction connectors B-112, B-129, and repair if necessary.

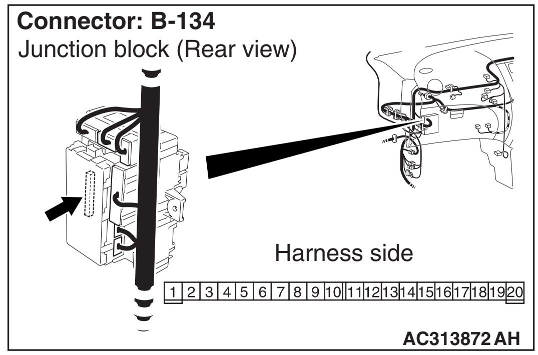
- Check the power supply line to ignition switch (ACC) for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 5. Connector check: B-134 ETACS-ECU connector.

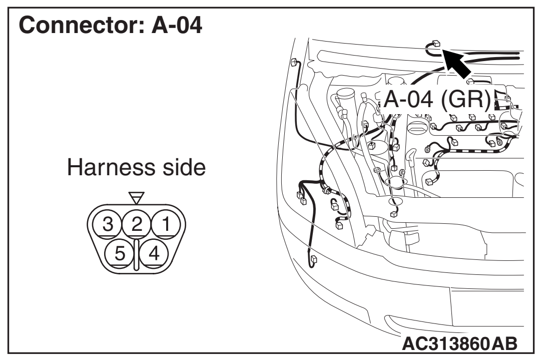


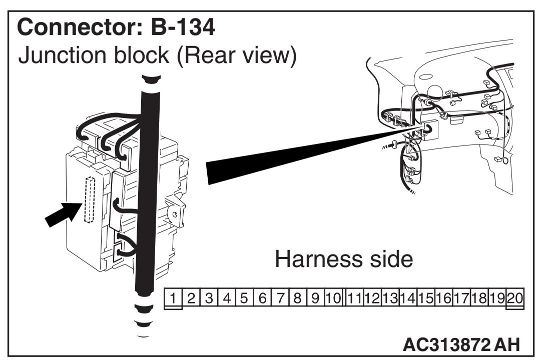
Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair the connector.

Step 6. Check the wiring harness between A-04 windshield wiper motor connector terminal No.3 to B-134 ETACS-ECU connector terminal No.6.





- Check the input signal lines.

Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the wiring harness.

Main Index
Group TOC

Step 7. Retest the system.

Check that the windshield wipers stop at the specified park position.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

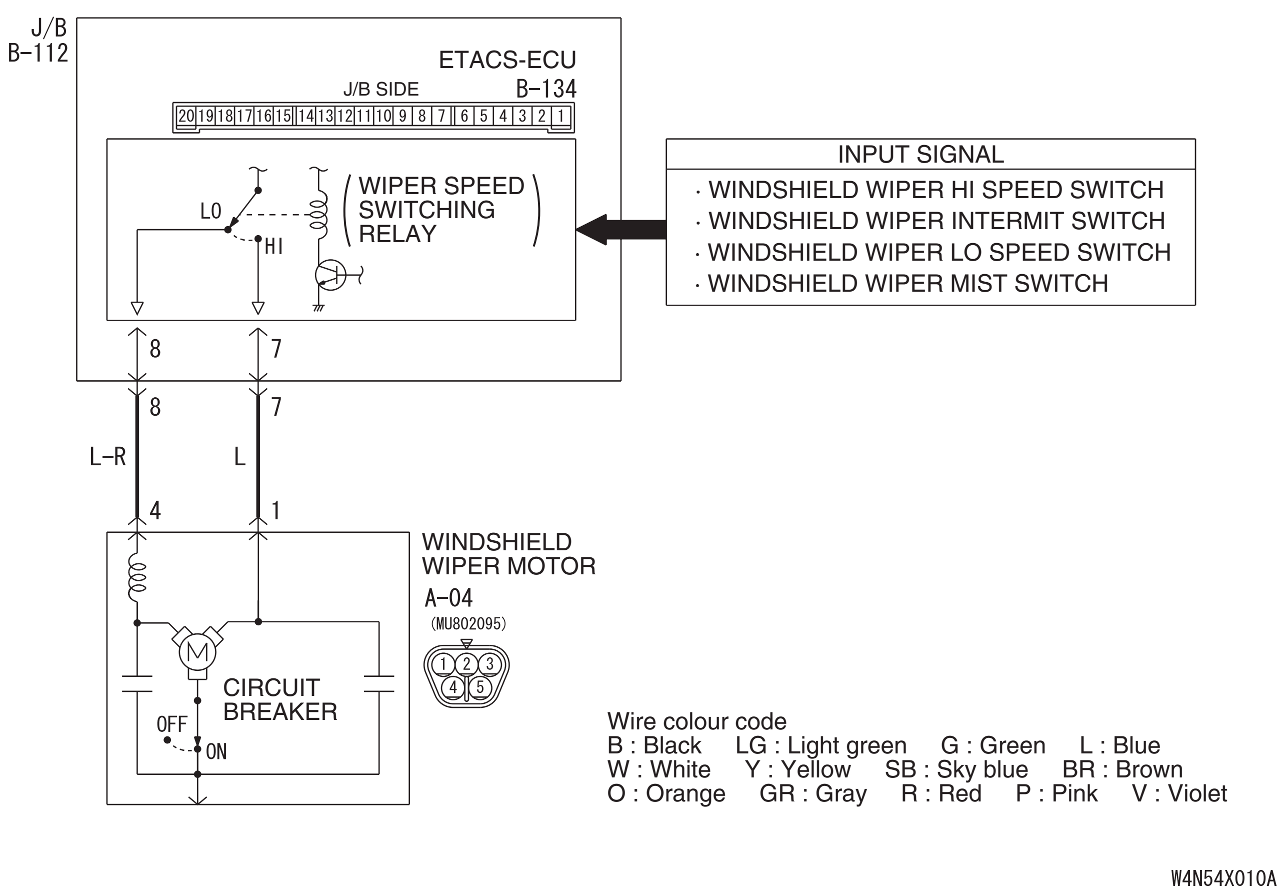
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE F-4: The windshield wipers does not work normally.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Windshield Wiper Motor Drive Circuit



COMMENTS ON TROUBLE SYMPTOM

The windshield wiper motor, the column switch or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the windshield wiper motor
- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

Main Index
Group TOC

Step 1. SWS monitor data list

Check the SWS communication signal, which are related to the windshield wipers.

<Selected item> Column switch (column-ECU)

- Ignition switch: ON
- Move the windshield wiper switch to each position.

Item No.	Item name	Normal condition
Item 31	IG SW(ACC)	ON
Item 05	INT WIPER SW	ON
Item 06	LO WIPER SW	ON
Item 07	HI WIPER SW	ON
Item 08	MIST WIPER SW	ON

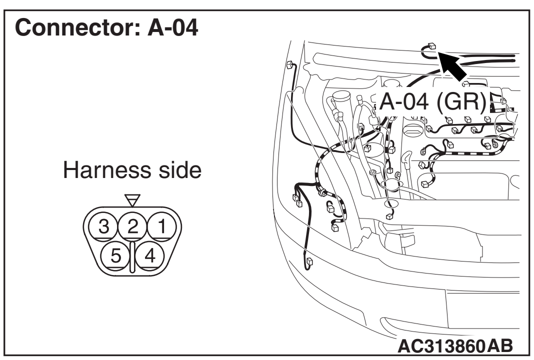
OK: Normal conditions are displayed for all the functions of the switch.

Q: Are the check result normal?

YES : Go to Step 2.

NO : Refer to Inspection Procedure N-5 "Column switch (windshield wiper/washer and rear wiper washer switch) signal is not received P.54C-210."

Step 2. Connector check: A-04 windshield wiper motor connector.



Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the defective connector.

Step 3. Check the windshield wiper motor assembly.

Refer to GROUP 51 – Windshield wiper P.51-31.

Q: Is the check result normal?

YES : Go to Step 4.

NO : Replace the windshield wiper motor assembly.

Step 4. Retest the system.

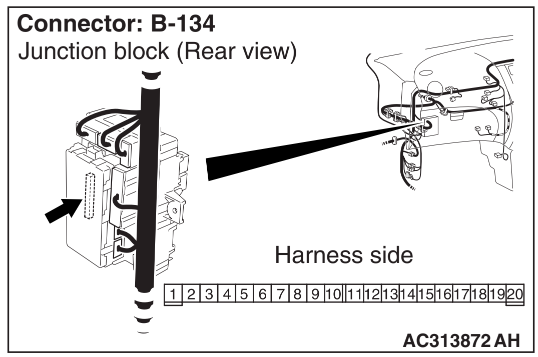
Check that the windshield wipers work normally by moving the switch to HI or MIST position.

Q: Is the check result normal?

YES : Go to Step 5.

NO : Go to Step 8.

Step 5. Connector check: B-134 ETACS-ECU connector.

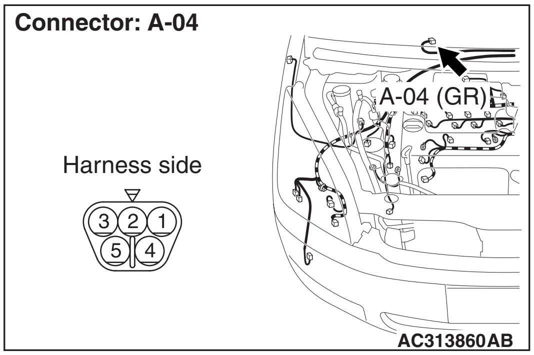


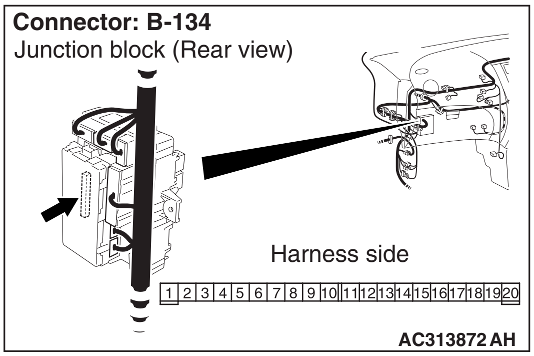
Q: Is the check result normal?

YES : Go to Step 6.

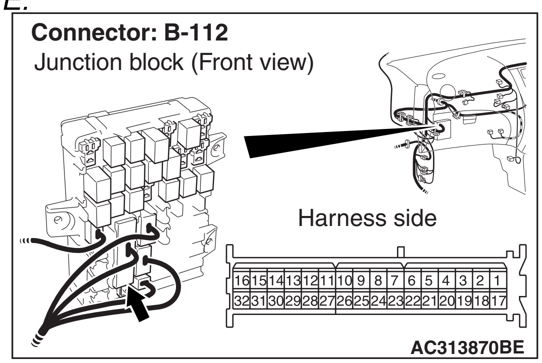
NO : Repair the defective connector.

Step 6. Check the wiring harness between B-134 ETACS-ECU connector terminal No.8 to A-04 windshield wiper motor connector terminal No.4.





NOTE:



Prior to the wiring harness inspection, check junction block connector B-112, and repair if necessary.

- Check the output lines for open circuit.

Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the wiring harness.

Step 7. Retest the system.

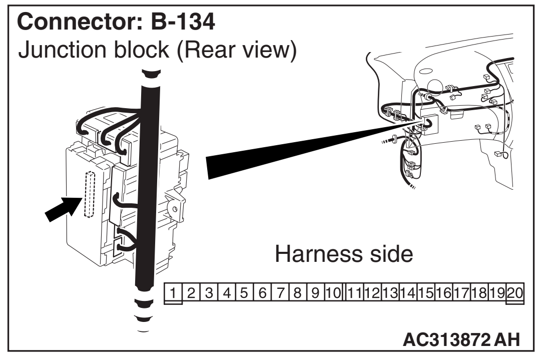
Check that the windshield wipers work normally by moving the switch to each position.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

Step 8. Connector check: B-134 ETACS-ECU connector.



Q: Is the check result normal?

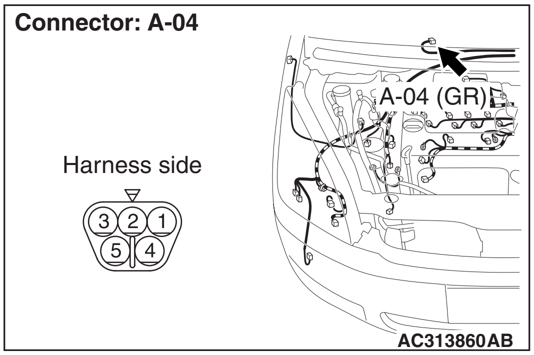
YES : Go to Step 9.

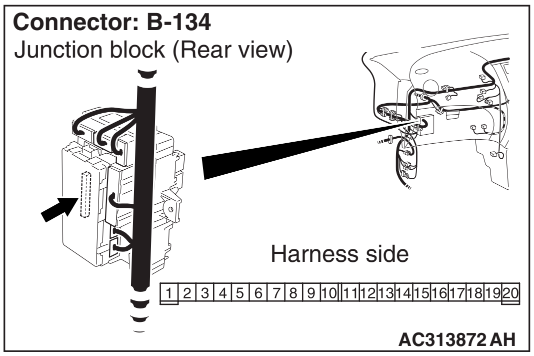
NO : Repair the defective connector.

Main Index

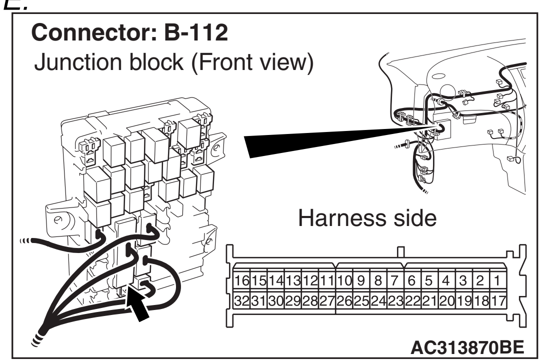
Group TOC

Step 9. Check the wiring harness between B-134 ETACS-ECU connector terminal No.7 to A-04 windshield wiper motor connector terminal No.1.





NOTE:



Prior to the wiring harness inspection, check junction block connector B-112, and repair if necessary.

- Check the output lines for open circuit.

Q: Is the check result normal?

YES : Go to Step 10.

NO : Repair the wiring harness.

Step 10. Retest the system.

Check that the windshield wipers work normally by moving the switch to each position.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

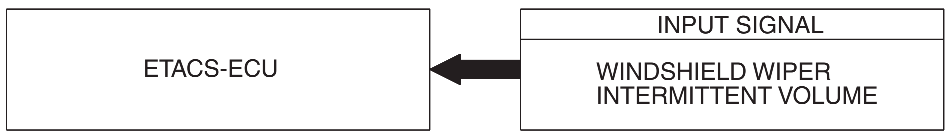
NO : Replace the ETACS-ECU.

Main Index
Group TOC

INSPECTION PROCEDURE F-5: The intermittent wiper interval can not be adjusted by operating the windshield intermittent wiper volume control.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Windshield Wiper Intermittent Volume Input Signal



W4X54E165A

COMMENTS ON TROUBLE SYMPTOM

The column switch or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. SWS monitor data list

- Rotate the windshield intermittent wiper volume when the vehicle is stopped.

NOTE: Also check that the windshield wiper interval changes smoothly when the windshield intermittent wiper interval adjusting knob is rotated from "SLOW" to "FAST" positions.

Item No.	Item name	Normal condition
Item 37	INT WIPER TIME	4.6 – 32.0 s

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to Inspection Procedure N-6 "The windshield intermittent wiper volume signal is not received P.54C-211."

Step 2. Retest the system.

Check that the windshield intermittent wiper interval can be adjusted by operating the windshield intermittent wiper volume control.

OK: The intermittent wiper interval is changed as the intermittent wiper volume is rotated.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

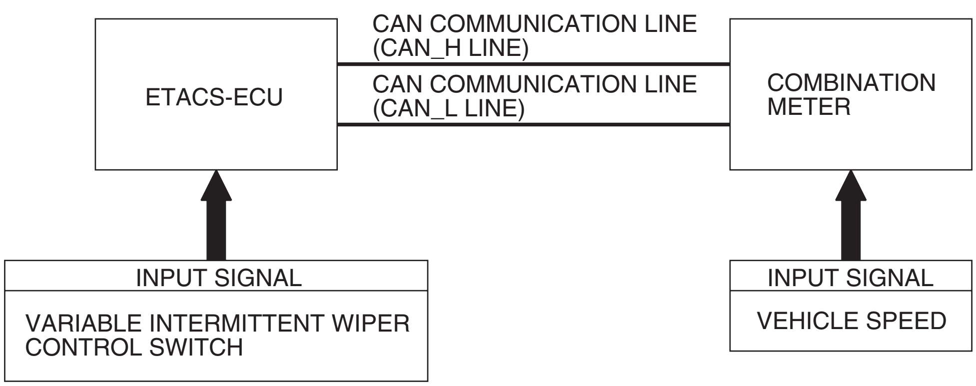
NO : Replace the ETACS-ECU.

Main Index
Group TOC

INSPECTION PROCEDURE F-6: The intermittent wiper interval is not changed according to the vehicle speed.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Variable Intermittent Wiper Control Circuit



W4X54E155A

COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU calculates the intermittent wiper interval according to the vehicle speed signal which is sent by the engine-CVT-ECU.
If the intermittent wiper interval does not depend on the vehicle speed, the input circuit of the vehicle speed signal and the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the operation by operating the intermittent wiper volume.

Check that the windshield intermittent wiper interval can be adjusted by operating the windshield intermittent wiper volume control.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure F-5 "The intermittent wiper interval can not be adjusted by operating the windshield intermittent wiper volume control P.54C-104."

Step 2. Customize function by using the SWS monitor

Use the SWS monitor customisation function to confirm that "SPEED SEN WIP" is set to "W.FUNCTION".

Q: Is the check result normal?
YES : Go to Step 3.
NO : Use the SWS monitor customisation function to set the "SPEED SEN WIP" to "W.FUNCTION" (Refer to P.54C-240).

Step 3. M.U.T.-III CAN bus diagnostics

Use the M.U.T.-III to diagnose the CAN bus lines.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the CAN bus line (Refer to GROUP 54D, Diagnosis P.54D-13).

Step 4. M.U.T.-III other system diagnosis code

Check whether the combination meter-related diagnosis code is set.

Q: Is the diagnosis code set?
YES : Diagnose the combination meter (Refer to GROUP 54A – Troubleshooting P.54A-31).
NO : Go to Step 5.

Main Index
Group TOC

Step 5. ECU check by using the SWS monitor.

Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: ON

ECU TO BE CHECKED

- ETACS ECU

OK: "OK" is displayed on the "ETACS-ECU" menu.

Q: Is the check result normal?

YES : Go to Step 6.

NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Step 6. Retest the system.

(1) Replace the ETACS-ECU.
(2) Check that the vehicle speed-dependent intermittent wiper system should work normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

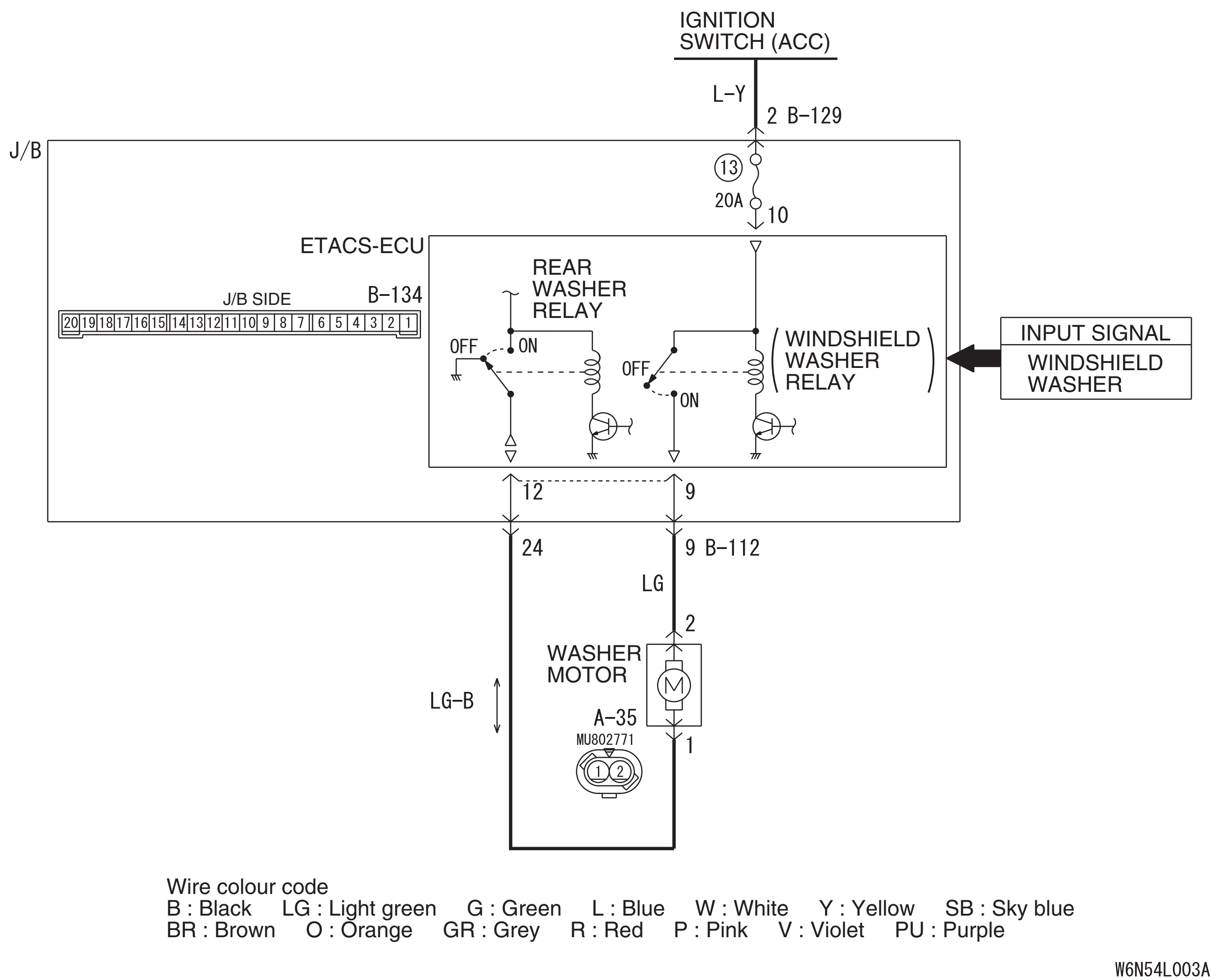
NO : Replace the combination meter.

Main Index
Group TOC

INSPECTION PROCEDURE F-7: The windshield washer does not work.

⚠ **CAUTION**
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Windshield Washer Motor Circuit



COMMENTS ON TROUBLE SYMPTOM

The washer motor, the column switch, the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the washer motor
- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the operation of the windshield wipers.

Check that the windshield wipers work normally.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to Inspection Procedure F-1 "The windshield wipers does not work at all P.54C-91."

Main Index
Group TOC

Step 2. ECU check by using the SWS monitor.

Check that the power supply and earth lines to the column switch (column-ECU), the ETACS-ECU and the SWS communication lines are normal.

- Turn the ignition switch to the ACC position.

ECU TO BE CHECKED

- COLUMN ECU
- ETACS ECU

OK: "OK" are displayed for all the items

Q: Are the check results normal?

"OK" are displayed for all the items : Go to Step 3.

"NG" is displayed on the "COLUMN ECU" menu. : Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-37."

"NG" is displayed on the "ETACS ECU" menu. : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Step 3. Function diagnosis by using the SWS monitor.

Check the SWS communication signal, which are related to the windshield washer function.

<Selected item> F.WIPER WASH

- Turn the ignition switch to the ACC position.
- Windshield washer switch: ON

Item No.	Item name	Normal condition
Item 09	FRONT WASH. SW	ON

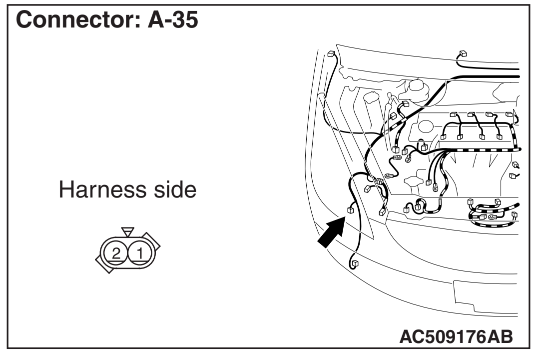
OK: Normal condition is displayed.

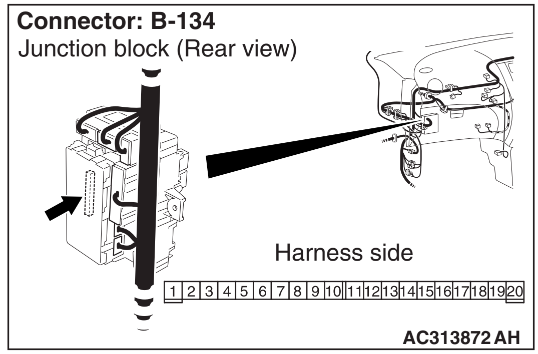
Q: Is the check result normal?

YES : Go to Step 4.

NO : Refer to Inspection Procedure N-5 "The column switch (windshield wiper washer and rear wiper washer switch) signal is not received P.54C-210."

Step 4. Connector check: A-35 motor connector and B-134 ETACS-ECU connector.





Q: Is the check result normal?

YES : Go to Step 5.

NO : Repair the connector.

Step 5. Check the windshield washer motor assembly.

Refer to GROUP 51 – Windshield wiper and washer P.51-28.

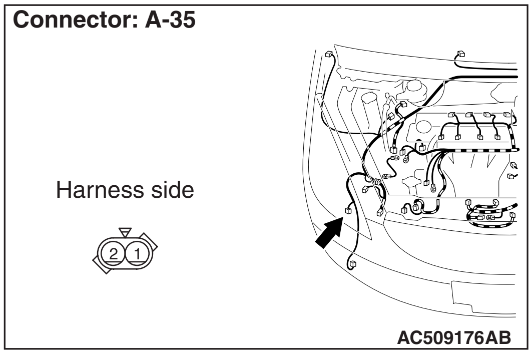
Q: Is the check result normal?

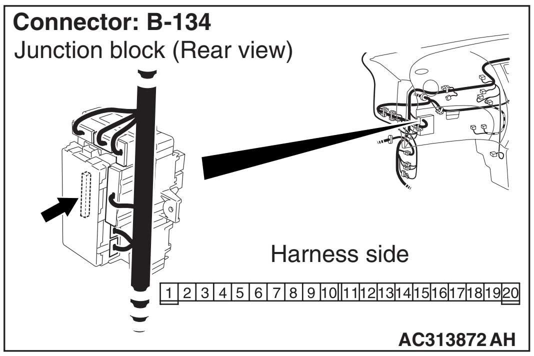
YES : Go to Step 6.

NO : Replace the windshield washer motor.

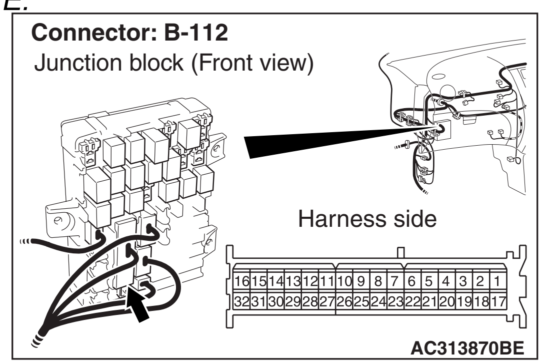
Main Index
Group TOC

Step 6. Check the wiring harness between A-35 washer motor connector terminal Nos.1, 2 to B-134 ETACS-ECU connector terminal Nos.12, 9.





NOTE:



Prior to the wiring harness inspection, check the junction block connector B-112 and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the wiring harness.

Step 7. Retest the system.

Check that the windshield washer works normally.

Q: Is the check result satisfactory?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

Main Index
Group TOC

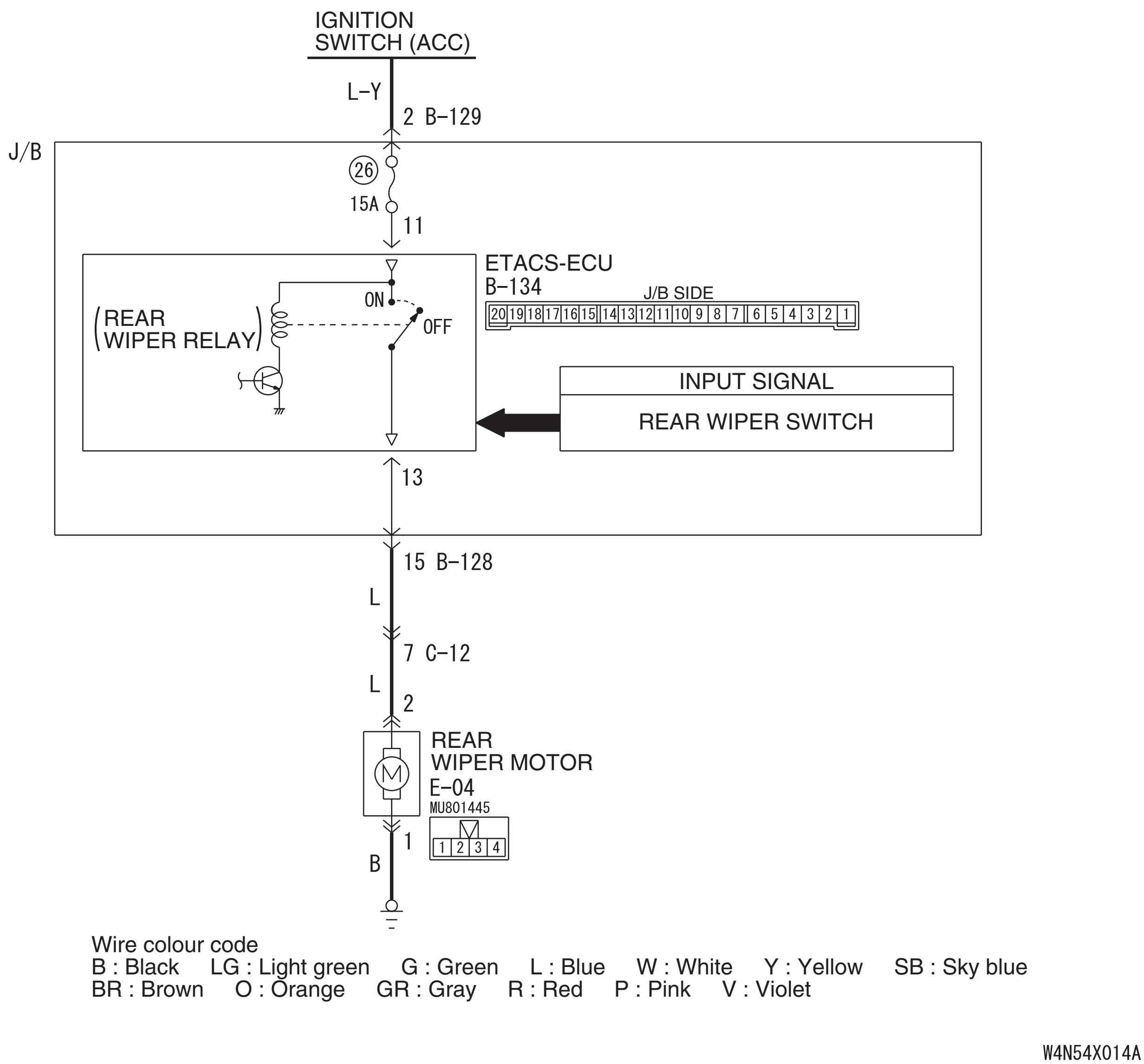
REAR WIPER AND WASHER

INSPECTION PROCEDURE G-1: The rear wiper does not work at all.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Rear Wiper Drive Circuit



COMMENTS ON TROUBLE SYMPTOM

If the rear wiper does not work normally, the input signal circuits to the components below, the rear wiper motor or the ETACS-ECU may be defective.

- Ignition switch (ACC)
- Rear wiper switch

POSSIBLE CAUSES

- Malfunction of the rear wiper motor
- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

Main Index
Group TOC

DIAGNOSIS PROCEDURE

Step 1. ECU check by using the SWS monitor.

Check that the power supply and earth lines to the column switch (column-ECU) and the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: ACC

ECU TO BE CHECKED

- COLUMN ECU
- ETACS ECU

OK: "OK" are displayed for all the items

Q: Are the check results normal?

"OK" are displayed for all the items : Go to Step 2.

"NG" is displayed on the "COLUMN ECU" menu. : Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-37."

"NG" is displayed on the "ETACS ECU" menu. : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Step 2. Function diagnosis by using the SWS monitor

Check the SWS communication signal, which are related to the rear wiper function.

<Selected item> REAR WIPER

- Ignition switch: ACC
- Rear wiper switch: ON

Item No.	Item name	Normal condition
Item 13	REAR WIPER SW	ON
Item 31	IG SW (ACC)	ON

OK: Normal conditions are displayed for all the items.

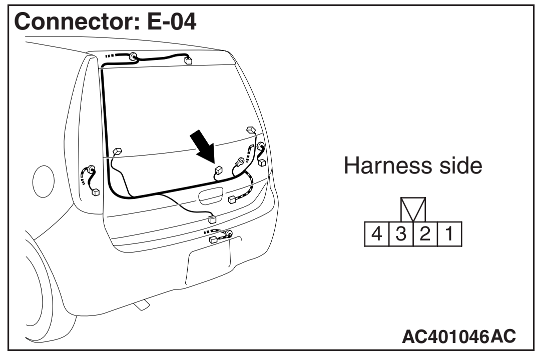
Q: Are the check results normal?

Normal conditions are displayed for all the items : Go to Step 3.

Normal condition is not displayed for item No.13 : Replace the column switch.

Normal condition is not displayed for item No.31 : Refer to inspection procedure N-1 "The ignition switch (ACC) signal is not received P.54C-201."

Step 3. Connector check: E-04 rear wiper motor connector.



Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair the connector.

Step 4. Check the rear wiper motor.

Refer to GROUP 51 – Rear wiper and washer P.51-38.

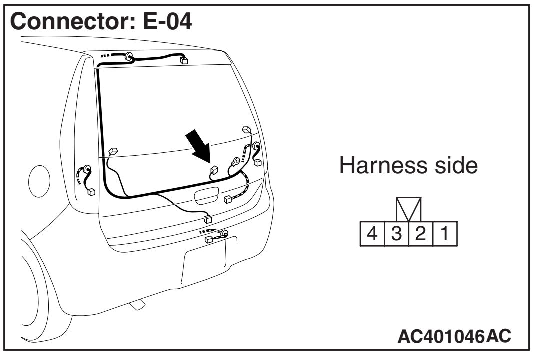
Q: Is the check result normal?

YES : Go to Step 5.

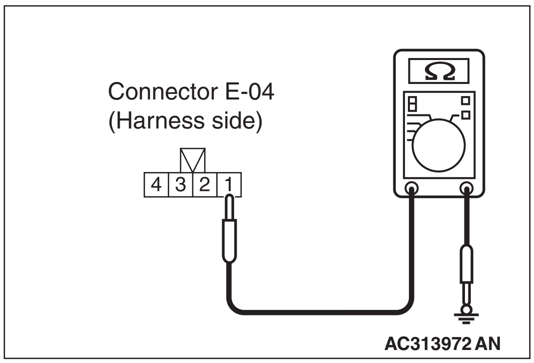
NO : Replace the rear wiper motor.

Main Index
Group TOC

Step 5. Resistance measurement at the E-04 rear wiper motor connector.



(1) Disconnect the connector, and measure at the wiring harness side.



(2) Resistance between E-04 rear wiper motor connector terminal No.1 and body earth

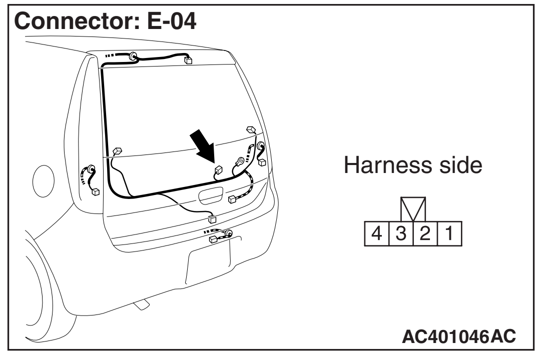
OK: Continuity exists (2 Ω or less)

Q: Is the check result normal?

YES : Go to Step 7.

NO : Go to Step 6.

Step 6. Check the wiring harness between E-04 rear wiper motor connector terminal No.1 to body earth.



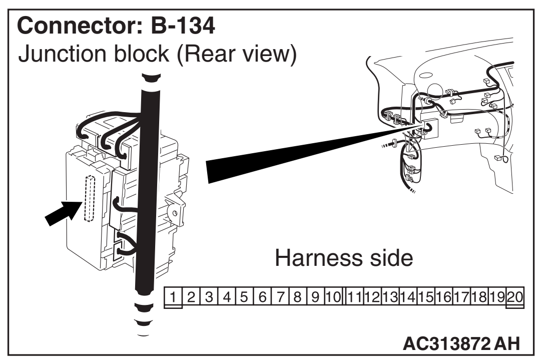
- Check the earth line for open or short circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 7. Connector check: B-134 ETACS-ECU connector.



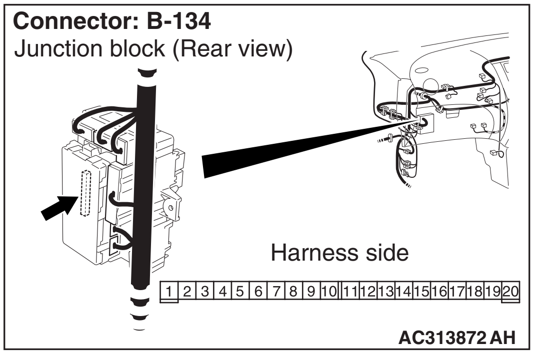
Q: Is the check result normal?

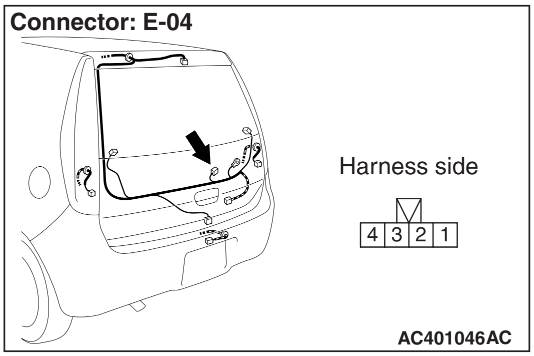
YES : Go to Step 8.

NO : Repair the connector.

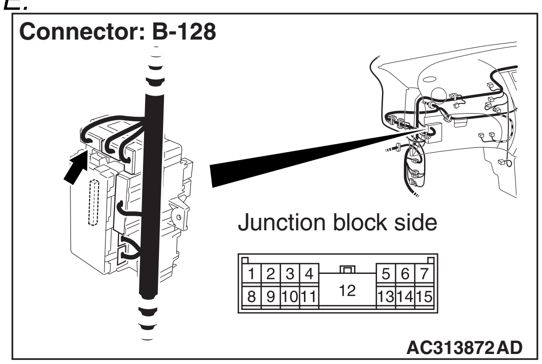
Main Index
Group TOC

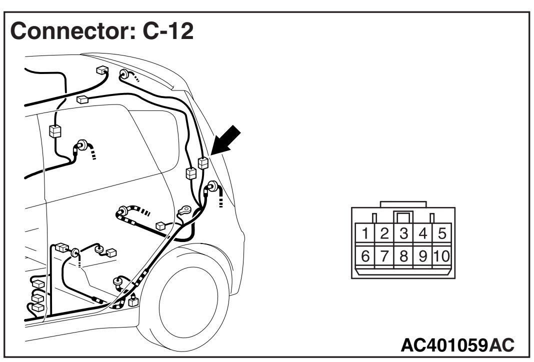
Step 8. Check the wiring harness between B-134 ETACS-ECU connector terminal No.13 to E-04 rear wiper motor connector terminal No.2.





NOTE:





Prior to the wiring harness inspection, check intermediate connector C-12 and junction block connectors B-128, and repair if necessary.

- Check the output line.

Q: Is the check result normal?

YES : Go to Step 9.

NO : Repair the wiring harness.

Step 9. Retest the system.

Check that the rear wiper works normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

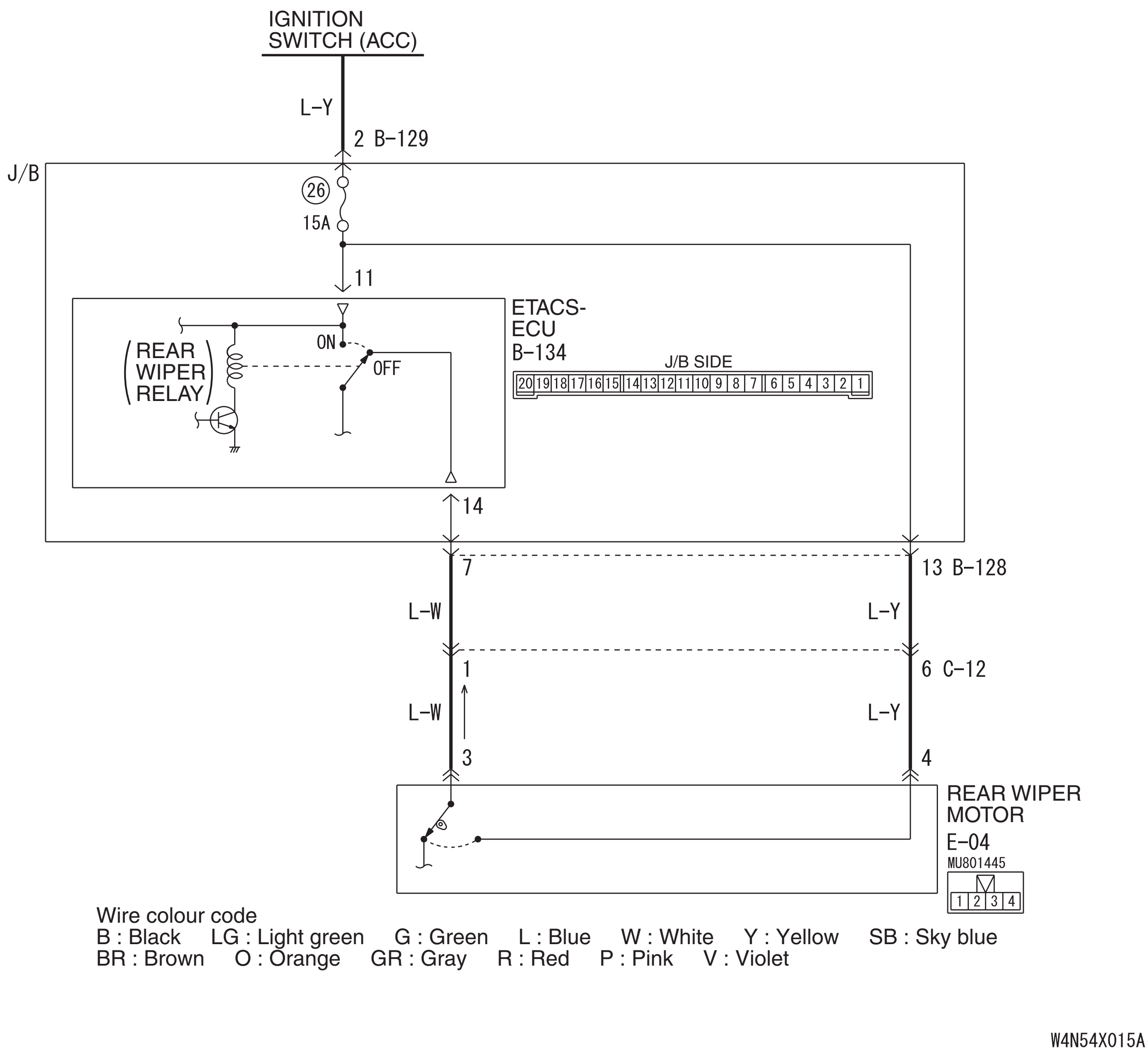
NO : Replace the ETACS-ECU.

Main Index
Group TOC

INSPECTION PROCEDURE G-2: The rear wiper does not stop at the specified park position.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Rear Wiper Auto-Stop Signal Input



COMMENTS ON TROUBLE SYMPTOM

If the rear wiper does not stop normally within the predetermined range, the rear wiper motor or the ETACS-ECU may be defective.

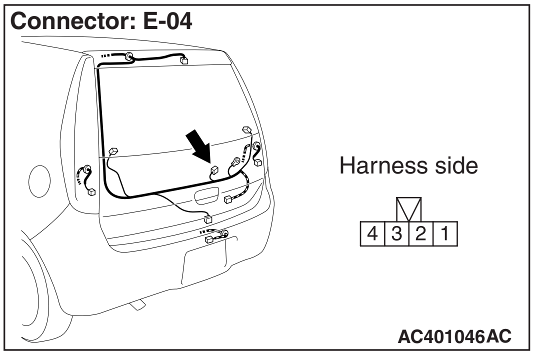
POSSIBLE CAUSES

- Malfunction of the rear wiper motor
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

Main Index
Group TOC

DIAGNOSIS PROCEDURE

Step 1. Connector check: E-04 rear wiper motor connector.



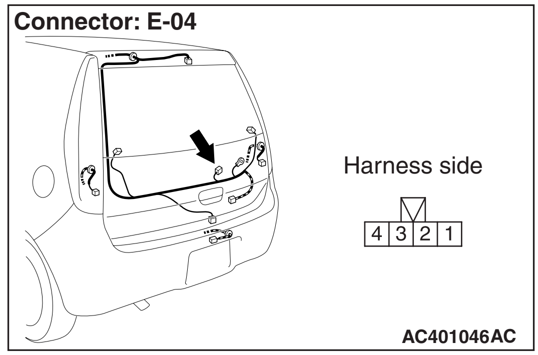
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the connector.

Step 2. Check the rear wiper motor.

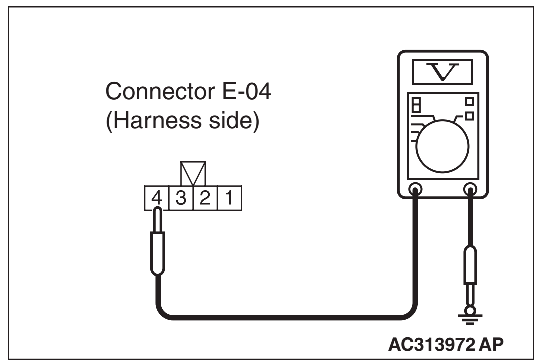
Refer to GROUP 51 – Rear wiper and washer P.51-38.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the rear wiper motor.

Step 3. Voltage measurement at the E-04 rear wiper motor connector.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Ignition switch: ACC



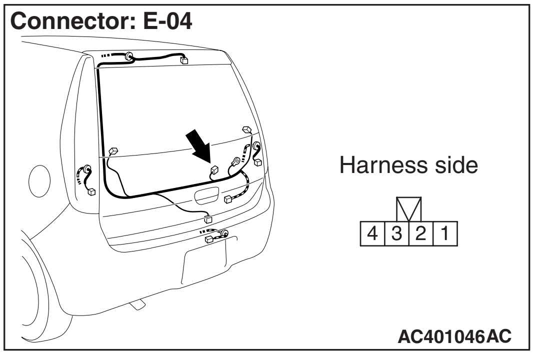
(3) Check the voltage between E-04 rear wiper motor connector terminal No.4 and body earth

OK: System voltage

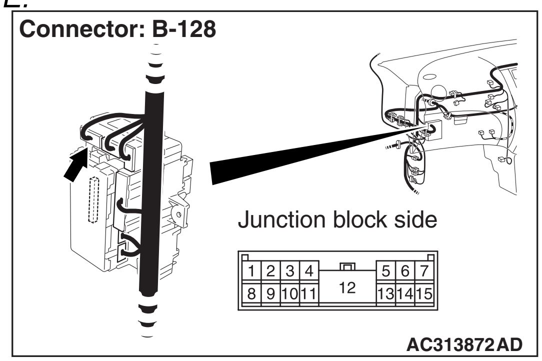
Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

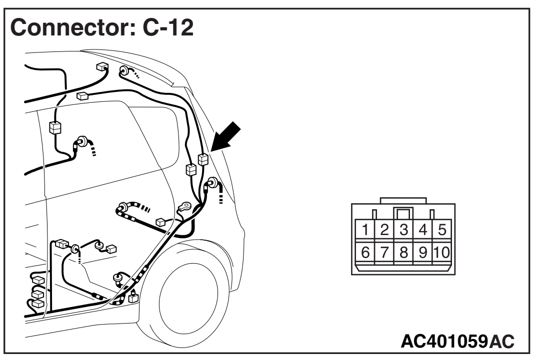
Main Index
Group TOC

Step 4. Check the wiring harness between ignition switch (ACC) to E-04 rear wiper motor connector terminal No.4.



NOTE:





Prior to the wiring harness inspection, check intermediate connector C-12 and junction block connectors B-128, and repair if necessary.

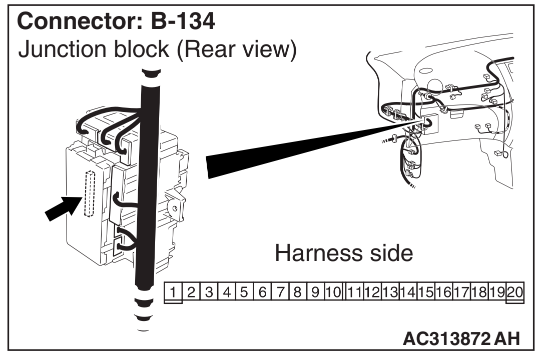
- Check the power supply line for open or short circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 5. Connector check: B-134 ETACS-ECU connector.



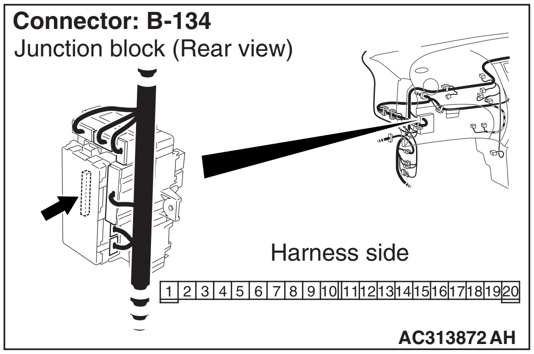
Q: Is the check result normal?

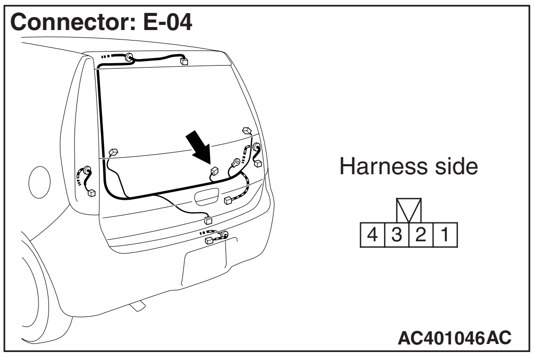
YES : Go to Step 6.

NO : Repair the connector.

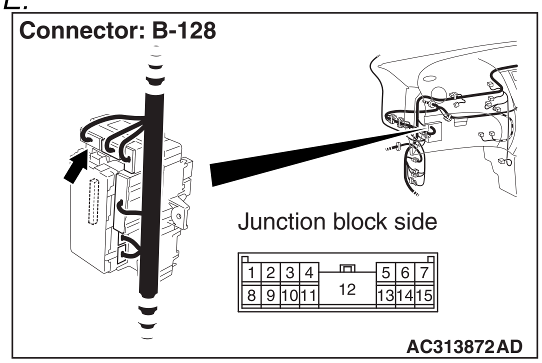
Main Index
Group TOC

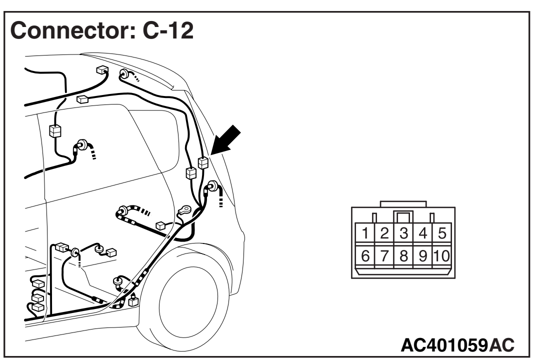
Step 6. Check the wiring harness between B-134 ETACS-ECU connector terminal No.14 to E-04 rear wiper motor connector terminal No.3.





NOTE:





Prior to the wiring harness inspection, check intermediate connector C-12, junction block connectors B-128, and repair if necessary.

- Check the power supply line for open or short circuit.

Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the wiring harness.

Step 7. ETACS switch data by using the SWS monitor.

- Ignition switch: ACC or ON
- Operate the rear wiper

Item No.	Item name	Normal condition
Item 09	R.WIPER A/STOP	ON

NOTE: Confirm that the M.U.T.-III displays from "ON" to "OFF" when rear wiper stops at the predetermined park position.

OK: Normal conditions is displayed.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

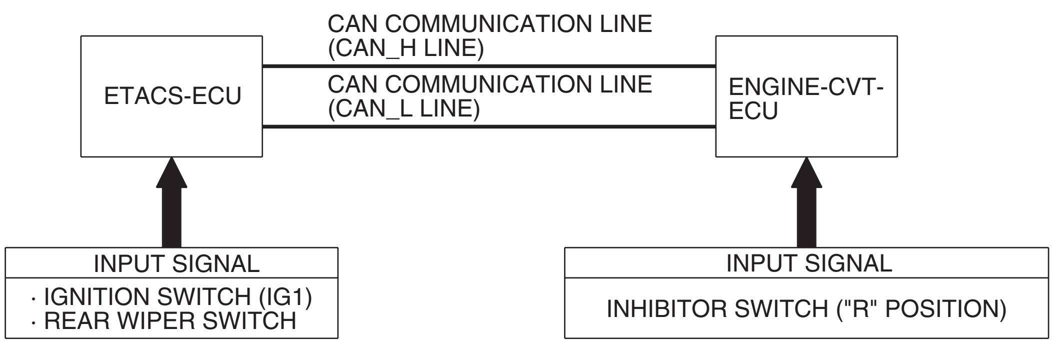
NO : Replace the ETACS-ECU.

Main Index
Group TOC

INSPECTION PROCEDURE G-3: When the selector lever is moved to "R" position during the rear wiper operation, the rear wiper does not operate at the continuous mode. <CVT>

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

"R" Position During Rear Wiper Operation Circuit



COMMENTS ON TROUBLE SYMPTOM

If the rear wiper does not operate consecutively when the selector lever is moved to the R position during the rear wiper operation, the shift position input signal circuit or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the engine-CVT-ECU
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the operation of the rear wiper.

Check that the rear wiper system should work normally by operating the rear wiper switch.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to inspection procedure G-1 "The rear wiper does not work at all P.54C-110."

Step 2. M.U.T.-III CAN bus diagnostics

Use the M.U.T.-III to diagnose the CAN bus lines.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the CAN bus line (Refer to GROUP 54D, Diagnosis P.54D-13).

Step 3. M.U.T.-III other system diagnosis code

Check whether the engine-CVT-ECU-related diagnosis code is set.

Q: Is the diagnosis code set?
YES : Diagnose the CVT (Refer to GROUP 23A – Troubleshooting P.23A-14).
NO : Go to Step 4.

Step 4. Retest the system.

Check that the rear wiper operates consecutively when the selector lever is moved to the R position during the rear wiper operation.

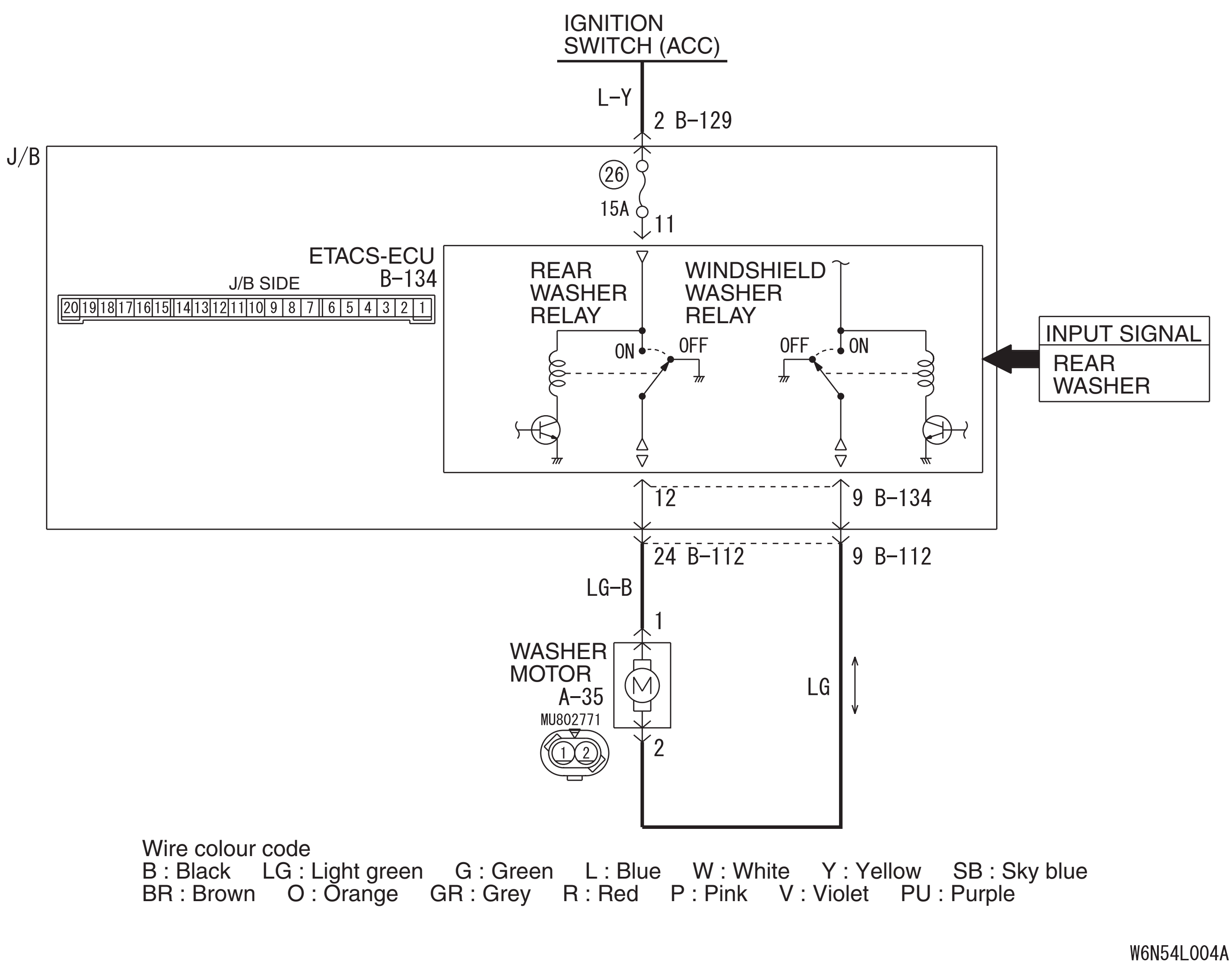
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Replace the ETACS-ECU.

Main Index
Group TOC

INSPECTION PROCEDURE G-4: The rear washer does not work.

⚠ **CAUTION**
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Rear Washer Motor Circuit



COMMENTS ON TROUBLE SYMPTOM

If the rear washer does not work normally, the input signal circuits to the rear washer switch, washer motor, the column switch, the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the washer motor
- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Confirm the operation of the rear wiper.
Check that the rear wiper work normally.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to Inspection Procedure G-1 "The rear wiper does not work at all P.54C-110."

Main Index
Group TOC

Step 2. ECU check by using the SWS monitor.

Check that the power supply and earth lines to the column switch (column-ECU), the ETACS-ECU and the SWS communication lines are normal.

- Turn the ignition switch to the ACC position.

ECU TO BE CHECKED

- Column ECU
- ETACS-ECU

OK: "OK" are displayed for all the items

Q: Are the check results normal?

"OK" are displayed for all the items : Go to Step 3.

"NG" is displayed on the "COLUMN ECU" menu. : Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-37."

"NG" is displayed on the "ETACS ECU" menu. : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Step 3. Function diagnosis by using the SWS monitor

Check the SWS communication signal, which are related to the rear washer function.

<Selected item> REAR WIPER-REAR WASHER

- Ignition switch: ACC
- Rear washer switch: ON

Item No.	Item name	Normal condition
Item 14	REAR WASH. SW	ON

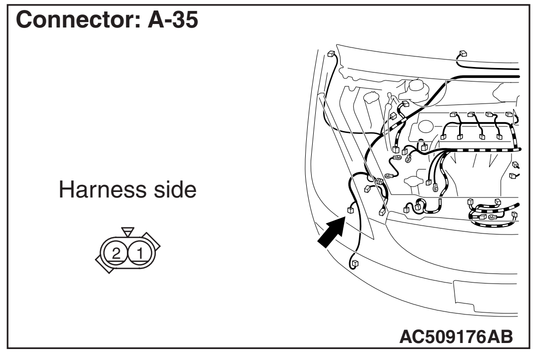
OK: Normal condition is displayed.

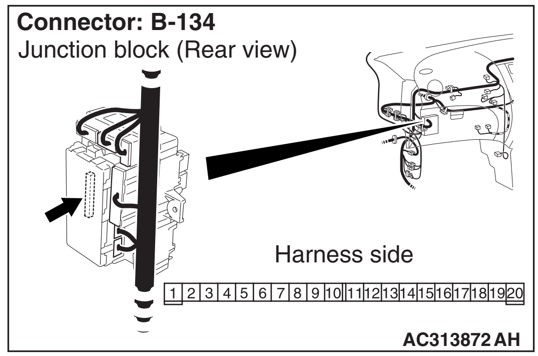
Q: Is the check result normal?

YES : Go to Step 4.

NO : Refer to inspection procedure N-5 "Column switch (windshield wiper/washer and rear wiper washer switch) signal is not received P.54C-210."

Step 4. Connector check: A-35 washer motor connector and B-134 ETACS-ECU connector.





Q: Is the check result normal?

YES : Go to Step 5.

NO : Repair the connector.

Step 5. Check the washer motor.

Refer to GROUP 51 – Rear wiper and washer P.51-36.

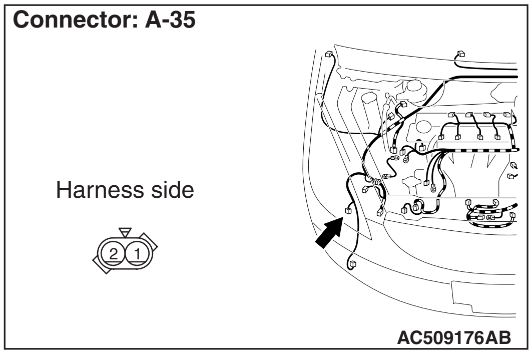
Q: Is the check result normal?

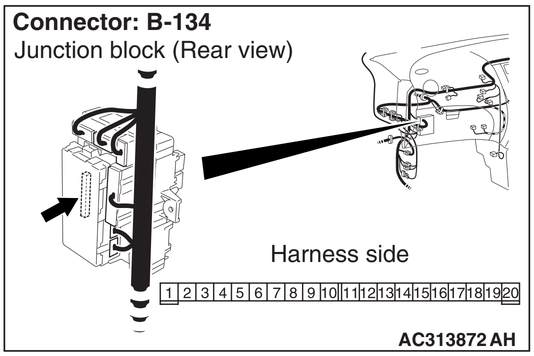
YES : Go to Step 6.

NO : Replace the washer motor.

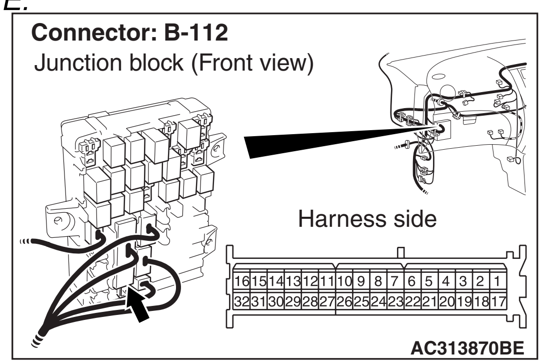
Main Index
Group TOC

Step 6. Check the wiring harness between B-134 ETACS-ECU connector terminal Nos.12, 9 to A-35 washer motor connector terminal No.1, 2.





NOTE:



Prior to the wiring harness inspection, check junction block connector B-112, and repair if necessary.

- Check the output signal line.

Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the wiring harness.

Step 7. Retest the system.

Check that the rear washer works normally.

Q: Is the check result satisfactory?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

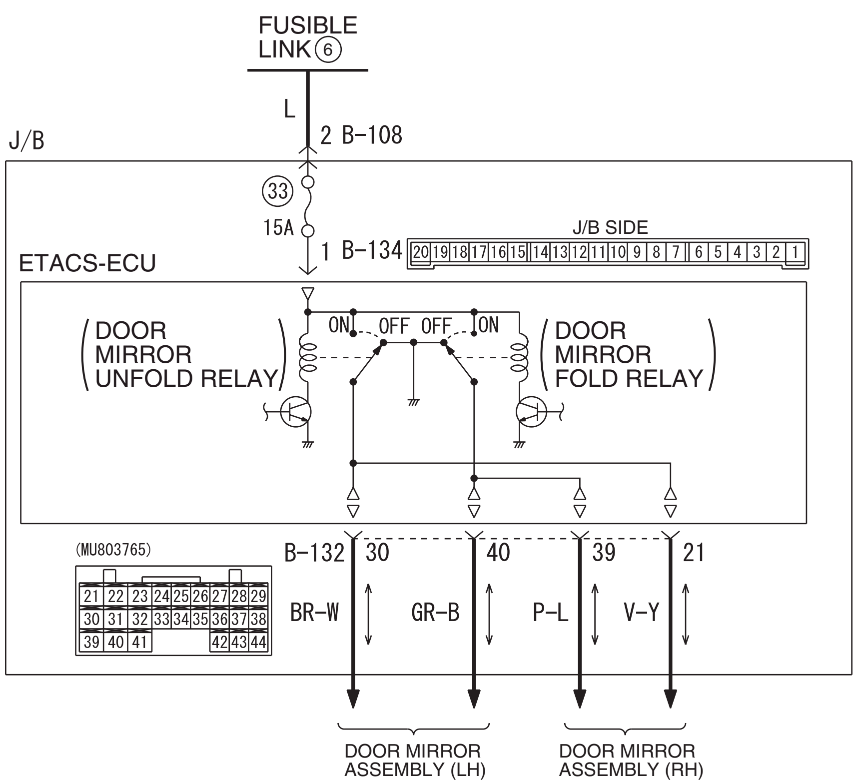
Main Index
Group TOC

ELECTRIC RETRACTABLE REMOTE CONTROLLED DOOR MIRROR

INSPECTION PROCEDURE H-1: Electric retractable remote controlled door mirror does not work at all.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Door Mirror Relay Circuit



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4N54X021A

COMMENTS ON TROUBLE SYMPTOM

If the system does not work, the input circuit from the ignition switch (ACC) or the remote controlled mirror switch (folding and unfolding), the door mirror assembly or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the remote controlled mirror switch
- Malfunction of the ignition switch (ACC)
- Malfunction of door mirror assembly
- Malfunction of ETACS-ECU
- Damaged harness wires and connectors

Main Index
Group TOC

DIAGNOSIS PROCEDURE

Step 1. ECU check on the SWS monitor.

Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: ACC

ECU TO BE CHECKED

- ETACS ECU

OK: "OK" is displayed on the "ETACS ECU" menu.

Q: Is the check result normal?

YES : Go to Step 2.
NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Step 2. SWS monitor data list.

Check the SWS communication signal, which are related to the electric retractable remote controlled mirror.

<Selected item> ETACS ECU

- Ignition switch: ACC

Item No.	Item name	Normal condition
Item 31	IG SW ACC	ON

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : Go to Step 3.
NO : Refer to inspection procedure N-1 "The ignition switch (ACC) signal is not received P.54C-201."

Step 3. ETACS switch data by using the SWS monitor

Check the ETACS-ECU signal, which is related to the electric retractable remote controlled mirror.

- Remote controlled mirror switch (folding/unfolding switch): ON

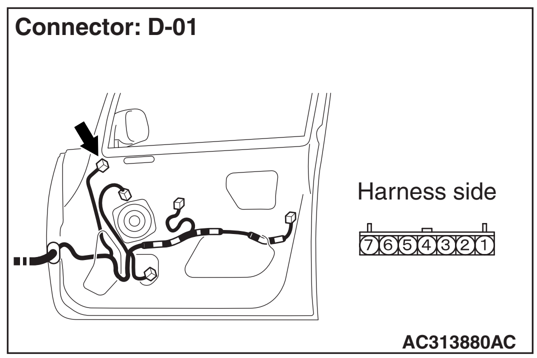
Item No.	Item name	Normal condition
Item 14	EL RET MIR SW	ON

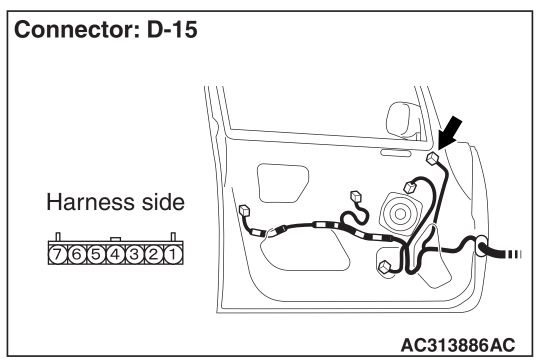
OK: Normal condition is displayed

Q: Is the check result normal?

YES : Go to Step 4.
NO : Refer to inspection procedure N-8 "Signal is not received from the remote controlled mirror switch (folding/unfolding switch) P.54C-216."

Step 4. Connector check: D-01 door mirror assembly (RH) and D-15 door mirror assembly (LH) connector





Q: Is the check result normal?

YES : Go to Step 5.
NO : Repair the connector.

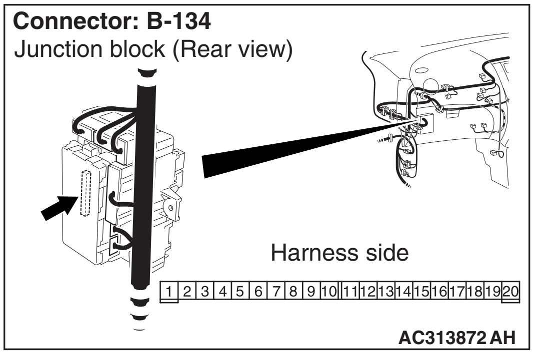
Step 5. Check the door mirror assemblies.

Check whether the door mirror assemblies work normally (Refer to GROUP 51 − Door Mirror P.51-43).

Q: Is the check result normal?

YES : Go to Step 6.
NO : Replace the door mirror assemblies.

Step 6. Connector check: B-134 ETACS-ECU connector

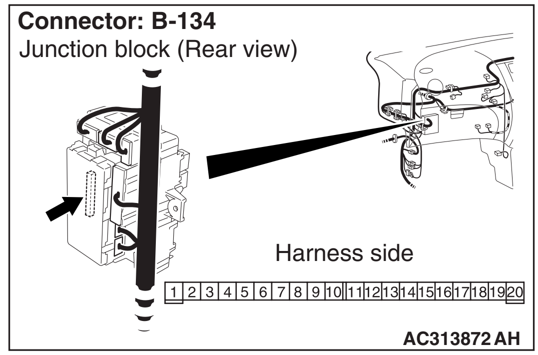


AC313872 AH

Q: Is the check result normal?

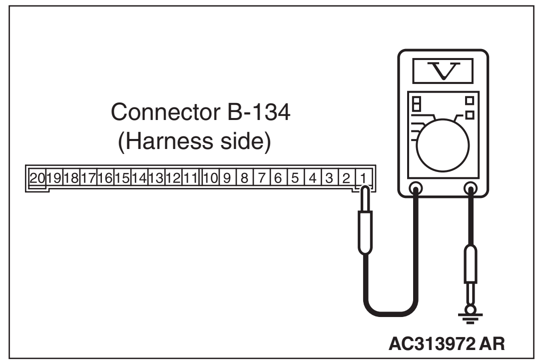
YES : Go to Step 7.
NO : Repair the connector.

Step 7. Voltage measurement at the B-134 ETACS-ECU connector



AC313872 AH

(1) Remove the ETACS-ECU, and measure at the junction block side.



AC313972 AR

(2) Check the voltage between the B-134 ETACS-ECU connector terminal No.1 and body earth.

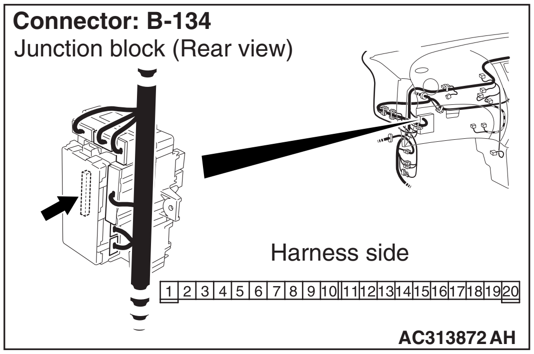
OK: System voltage

Q: Is the check result normal?

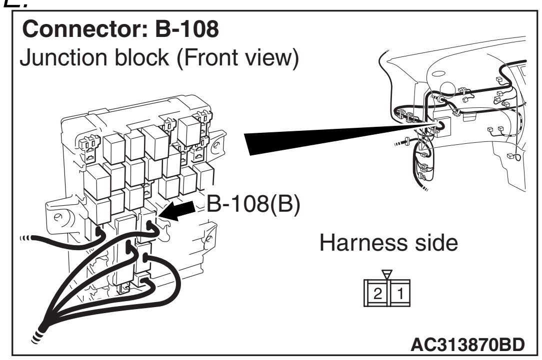
YES : Go to Step 9.
NO : Go to Step 8.

Main Index
Group TOC

Step 8. Check the wiring harness between B-134 ETACS-ECU connector terminal No.20 to the fusible link (1)



NOTE:



Prior to the wiring harness inspection, check junction block connector B-108, and repair if necessary.

- Check the power supply line to the battery for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 9. Retest the system

Check that the electric retractable remote controlled mirror works normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

Main Index

Group TOC

INSPECTION PROCEDURE H-2: Electric retractable remote controlled door mirror timer function does not at all.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the door mirror can be folded and unfolded with the remote controlled mirror switch (fold/unfold switch), the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the ETACS-ECU

DIAGNOSTIC PROCEDURE

Step 1. Check the electric retractable door mirrors operation.

Check that the door mirror is folded and unfolded with the remote controlled mirror switch when the ignition switch is at ACC position.

- Ignition switch: ACC

Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to inspection procedure H-1 "Electric retractable remote controlled door mirror does not work at all P.54C-122."

Step 2. ECU check on the SWS monitor

Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

ECU TO BE CHECKED

- ETACS ECU

OK: "OK" is displayed on the "ETACS ECU" menu.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Refer to Inspection Procedure A-3 "Communication with ETACS-ECU is not possible P.54C-41."

Step 3. SWS monitor data list.

Check the SWS communication signal, which are related to the electric retractable door mirror timer function.

<Selected item> ETACS ECU

- Ignition switch: IG1

Item No.	Item name	Normal condition
Item 30	IG SW IG1	ON

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : Go to Step 4.

NO : Refer to inspection procedure N-2 "The ignition switch (IG1) signal is not received P.54C-203."

Step 4. Retest the system.

Check that the electric retractable door mirror timer function works normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

Main Index
Group TOC

INSPECTION PROCEDURE H-3: Vehicle speed-dependent unfolding function does not work normally.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If this function does not work normally, the input signal circuit(s) below or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Defective vehicle speed signal (engine-CVT-ECU)
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. M.U.T.-III CAN bus diagnostics

Use the M.U.T.-III to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54D – Diagnosis P.54D-13).

Step 2. M.U.T.-III other system diagnosis code

Check whether the combination meter-related diagnosis code is set.

Q: Is the check result normal?

YES : Diagnose the combination meter (Refer to GROUP 54A – Troubleshooting P.54A-31).
NO : Go to Step 3.

Step 3. Retest the system.

Check that the vehicle speed-dependent unfolding function of the door mirrors works normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE H-4: Keyless entry system-linked fold/unfold function does not work normally.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If this function does not work normally, keyless entry transmitter input signal circuit or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Defective keyless entry transmitter
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the keyless entry operation.

Check that the keyless entry system works normally.

Q: Is the check result normal?

YES : Go to Step 2.
NO : Refer to inspection procedure E-1 "Keyless entry system does not work P.54C-84."

Step 2. Retest the system.

Check that the keyless entry interlock fold/unfold function for the door mirrors works normally.

Q: Is the check result normal?

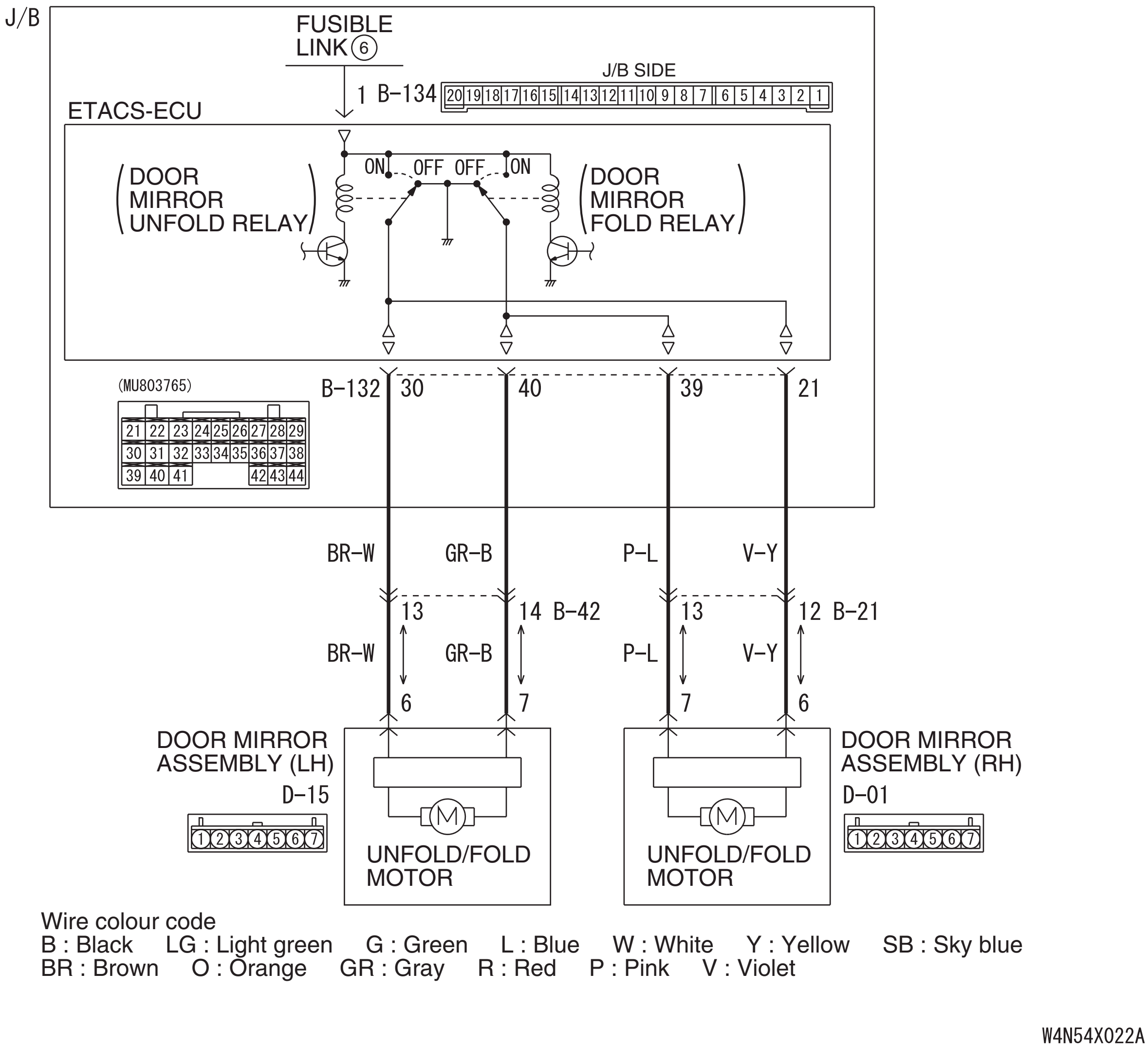
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Replace the ETACS-ECU.

Main Index
Group TOC

INSPECTION PROCEDURE H-5: Left or right side electric retractable remote controlled door mirror does not work at all.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Electric Retractable Remote Controlled Mirror Circuit



COMMENTS ON TROUBLE SYMPTOM

If left or right side electric retractable remote controlled door mirror does not work at all, door mirror assembly may be defective.

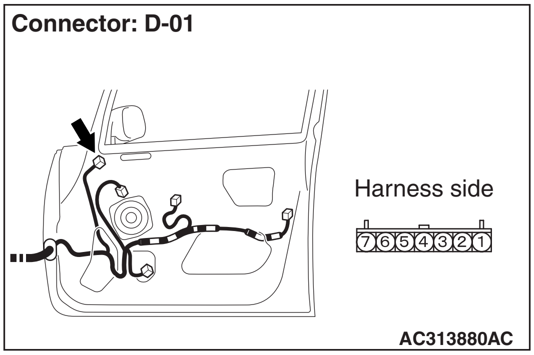
POSSIBLE CAUSES

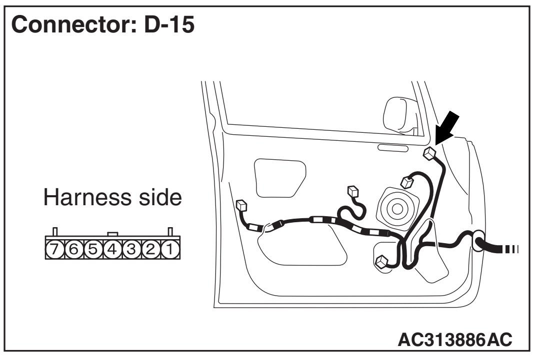
- Malfunction of the door mirror assembly
- Damaged harness wires and connectors

Main Index
Group TOC

DIAGNOSIS PROCEDURE

Step 1. Connectors check D-01 door mirror assembly (RH) connector and D-15 door mirror assembly (LH) connector





Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the connector.

Step 2. Check the door mirror assembly

Check whether the door mirror assembly has returned to normal operation (Refer to GROUP 51 – Door Mirror P.51-43).

Q: Is the check result normal?

YES : Go to Step 3.

NO : Replace the door assembly.

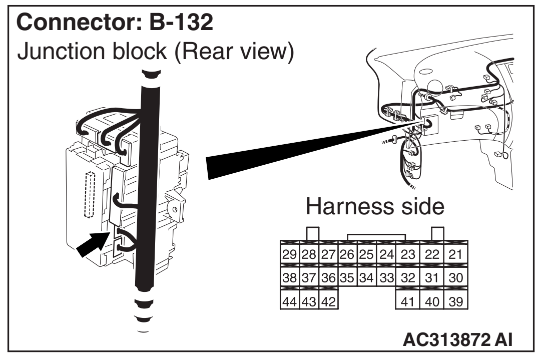
Step 3. Confirm which door mirror is defective

Q: Confirm which door mirror is defective.

LH : Go to Step 4.

RH : Go to Step 7.

Step 4. Connectors check: B-132 ETACS-ECU connector



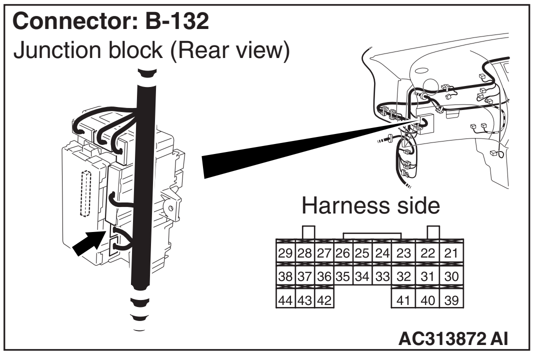
Q: Is the check result normal?

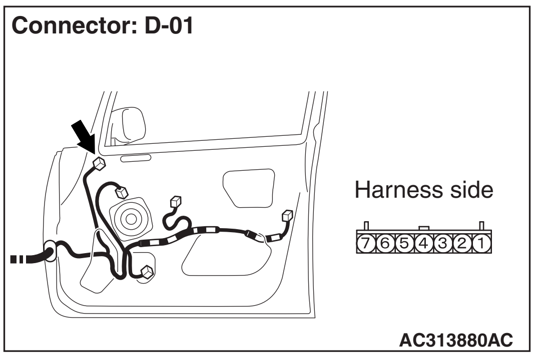
YES : Go to Step 5.

NO : Repair the connector.

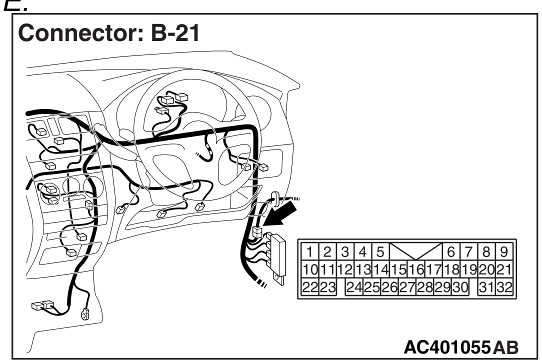
Main Index
Group TOC

Step 5. Check the wiring harness between D-01 door mirror assembly (RH) connector terminal No.6 to B-132 ETACS-ECU connector terminal No.21





NOTE:

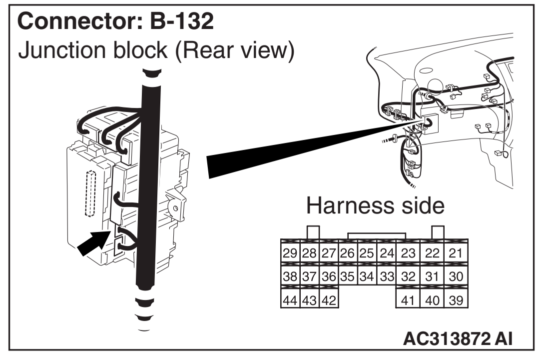


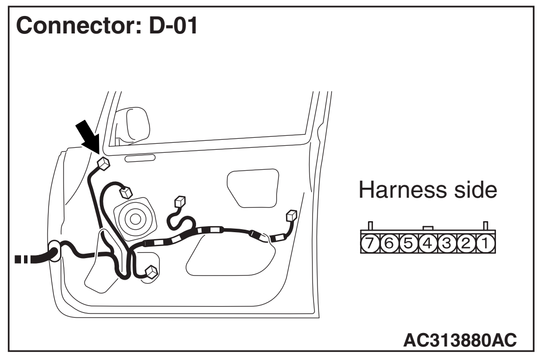
Prior to the wiring harness inspection, check intermediate connector B-21, and repair if necessary.

- Check the input and output signal line for open circuit.

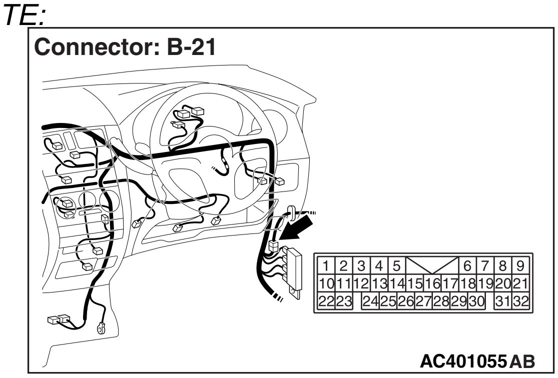
Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the wiring harness.

Step 6. Check the wiring harness between D-01 door mirror assembly (RH) connector terminal No.7 to B-132 ETACS-ECU connector terminal No.39





NOTE:



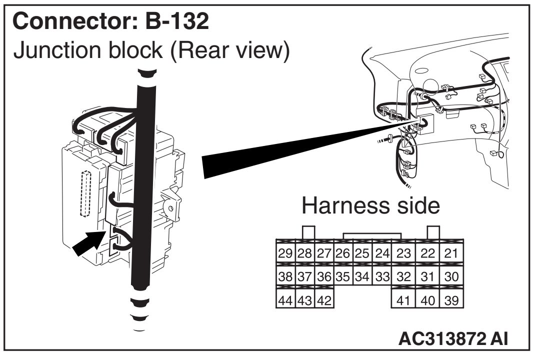
Prior to the wiring harness inspection, check intermediate connector B-21, and repair if necessary.

- Check the input and output signal line for open circuit.

Q: Is the check result normal?
YES : Go to Step 10.
NO : Repair the wiring harness.

Main Index
Group TOC

Step 7. Connector check: B-132 ETACS-ECU connector

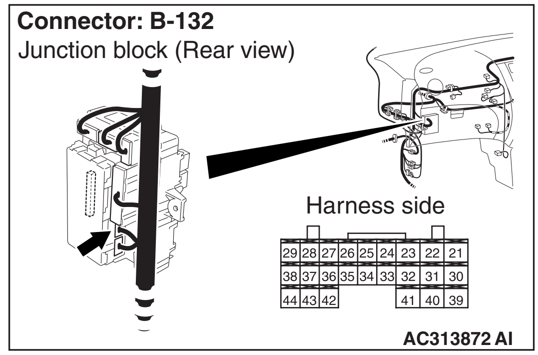


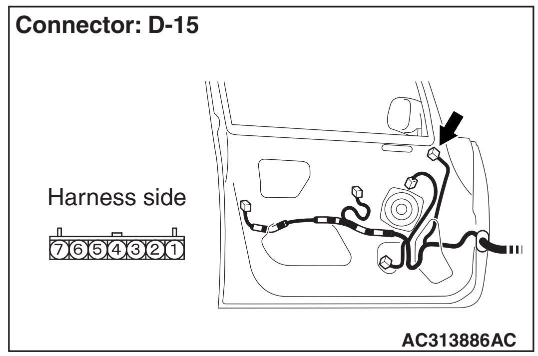
Q: Is the check result normal?

YES : Go to Step 8.

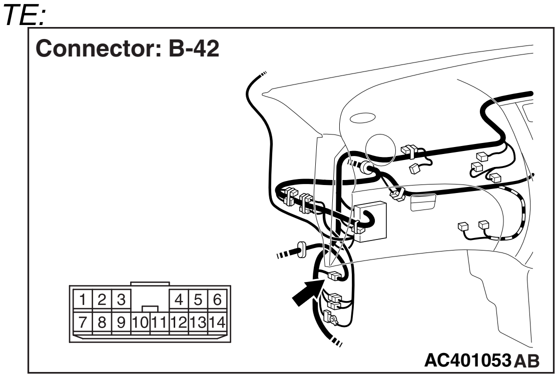
NO : Repair the connector.

Step 8. Check the wiring harness between D-15 door mirror assembly (LH) connector terminal No.6 to B-132 ETACS-ECU connector terminal No.30





NOTE:



Prior to the wiring harness inspection, check intermediate connector B-42, and repair if necessary.

- Check the input and output signal line for open circuit.

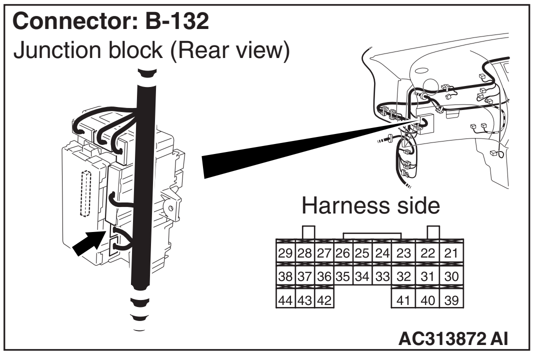
Q: Is the check result normal?

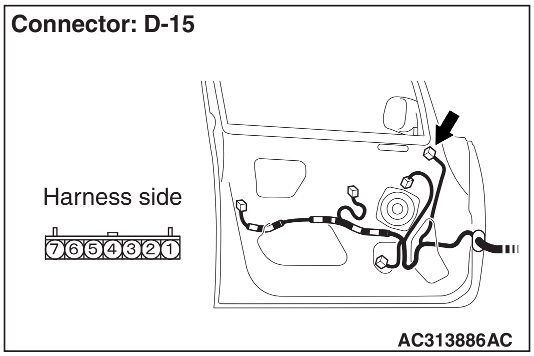
YES : Go to Step 9.

NO : Repair the wiring harness.

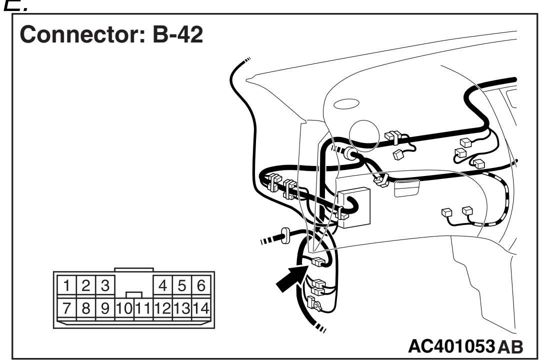
Main Index
Group TOC

Step 9. Check the wiring harness between D-15 door mirror assembly (LH) connector terminal No.7 to B-132 ETACS-ECU connector terminal No.40





NOTE:



Prior to the wiring harness inspection, check intermediate connector B-42, and repair if necessary.

- Check the input and output signal line for open circuit.

Q: Is the check result normal?

YES : Go to Step 10.

NO : Repair the wiring harness.

Step 10. Retest the system

Check that the electric retractable remote controlled mirror works normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

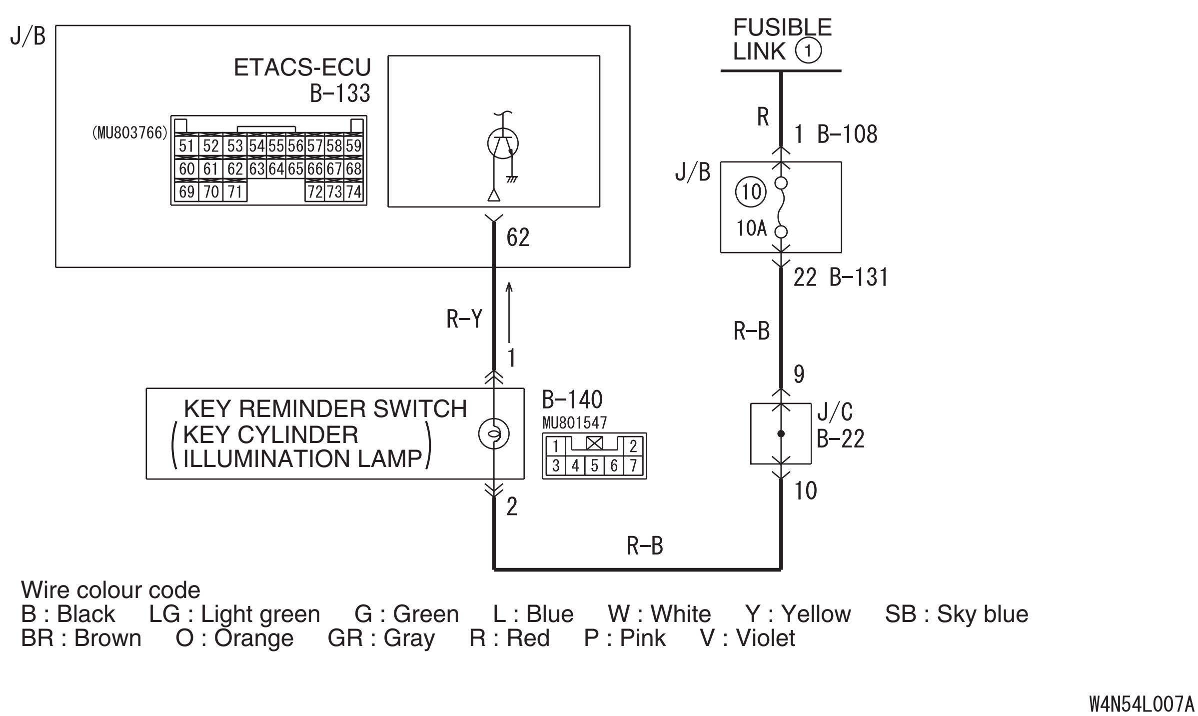
Main Index
Group TOC

IGNITION KEY CYLINDER ILLUMINATION LAMP

INSPECTION PROCEDURE I-1: The ignition key cylinder illumination lamp does not illuminate/extinguish normally.

⚠ **CAUTION**
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Ignition Key Cylinder Illumination Lamp Circuit



COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU operates this function in accordance with the input signals below.

- Ignition switch (IG1)
- Key reminder switch
- Driver's door switch

If this function does not work normally, these input signal circuit(s), the ignition key cylinder illumination lamp or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the key reminder switch
- Malfunction of the driver's door switch
- Malfunction of the ignition key cylinder illumination lamp
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the operation of the interior lamp.

Check that the interior lamps illuminate and extinguish normally.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to inspection procedure M-1 "The interior lamps (room ramp, luggage compartment lamp) does not illuminate or extinguish normally P.54C-186."

Main Index
Group TOC

Step 2. ECU check by using the SWS monitor.

Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

ECU TO BE CHECKED

- ETACS ECU

OK: "OK" is displayed on the "ETACS ECU" menu.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Step 3. SWS monitor data list

Check the SWS communication signal, which are related to the ignition key cylinder illumination lamp.

<Selected item> ETACS ECU

- Ignition switch: OFF
- Driver's door: open

Item No.	Item name	Normal condition
Item 30	IG SW(IG1)	OFF
Item 32	DR DOOR SW	ON

OK: Normal conditions are displayed for all the items

Q: Are the check result normal?

Normal conditions are displayed for all the items. : Go to Step 4.

Normal condition is not displayed for item No.30. : Refer to inspection procedure N-2 "The ignition switch (IG1) signal is not received P.54C-203."

Normal condition is not displayed for item No.32. : Refer to inspection procedure N-3 "The driver's door switch signal is not received P.54C-205."

Step 4. ETACS switch data by using the SWS monitor

Check the ETACS-ECU signals related to the ignition key cylinder illumination lamp.

- Ignition switch: OFF (key inserted)

Item No.	Item name	Normal condition
Item 03	KEY REMIN SW	OFF

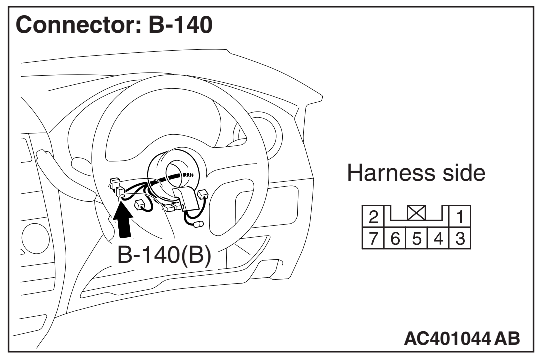
OK: Normal condition is displayed.

Q: Is the check result normal?

YES : Go to Step 5

NO : Refer to inspection procedure N-7 "The key reminder switch signal is not received P.54C-213."

Step 5. Connector check: B-140 key reminder switch connector.



Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair the defective connector.

Step 6. Check the bulb of the ignition key cylinder illumination lamp.

Check the bulb of the ignition key cylinder illumination lamp.

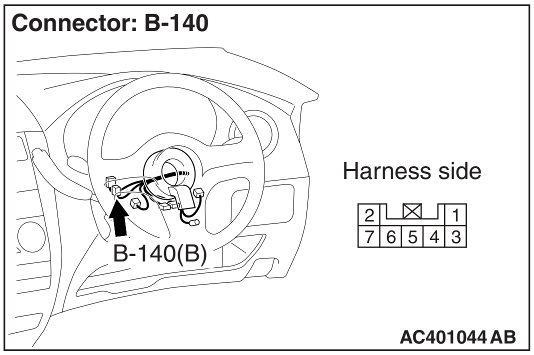
Q: Is the check result normal?

YES : Go to Step 7.

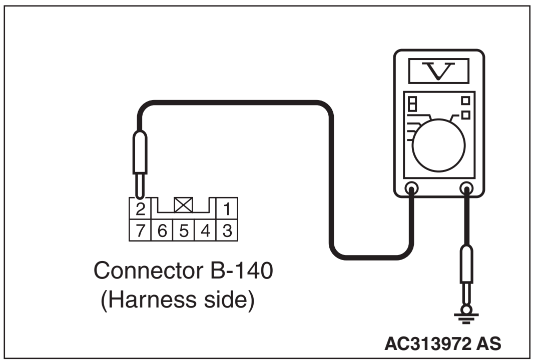
NO : Replace the bulb of the ignition key cylinder illumination lamp.

Main Index
Group TOC

Step 7. Voltage measurement at B-140 key reminder switch connector



(1) Disconnect the connector, and measure at the wiring harness side.

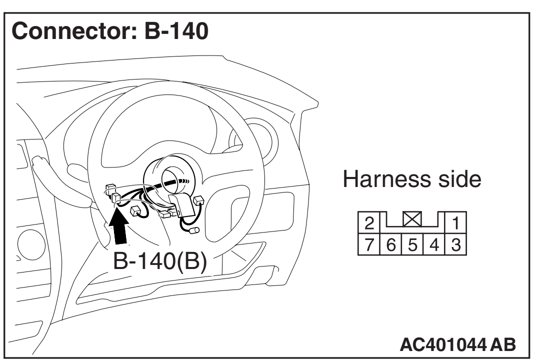


(2) Resistance between B-140 key reminder switch connector terminal No.2 and body earth

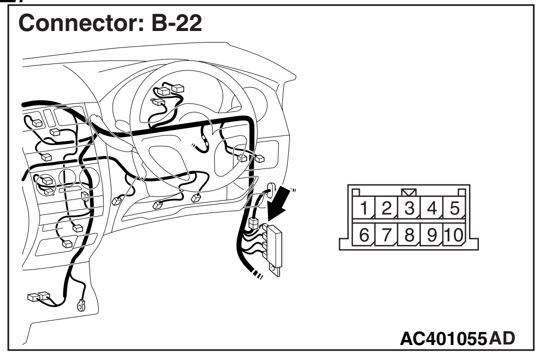
OK: System voltage

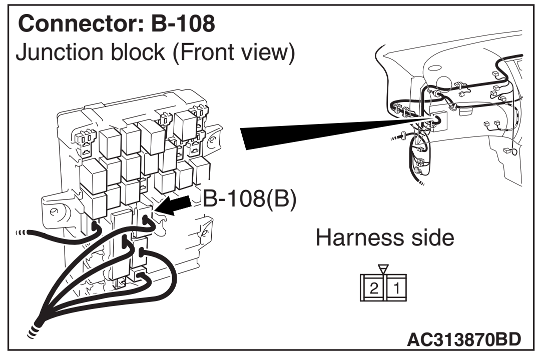
Q: Is the check result normal?
YES : Go to Step 9.
NO : Go to Step 8.

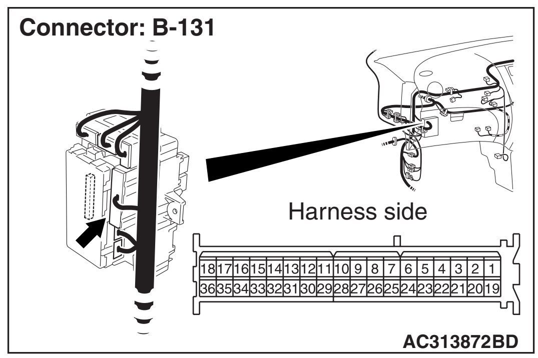
Step 8. Check the wiring harness from B-140 key reminder switch connector terminal No.2 to fusible link (1)



NOTE:







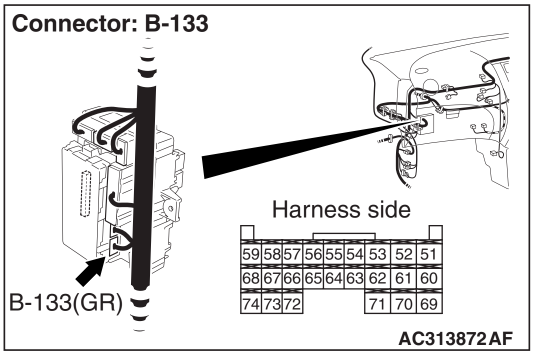
Prior to the wiring harness inspection, check intermediate connector B-22, and joint connector B-108, and junction block connector B-131 and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : Go to Step 11.
NO : Repair the wiring harness.

Main Index
Group TOC

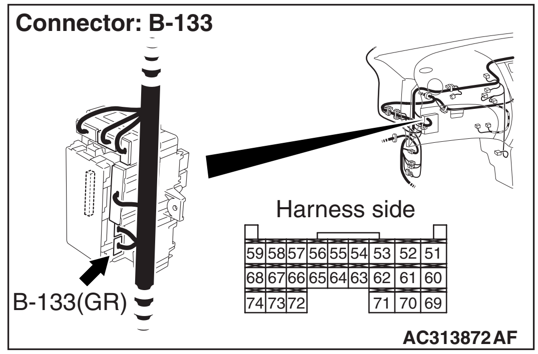
Step 9. Connector check: B-133 ETACS-ECU connector

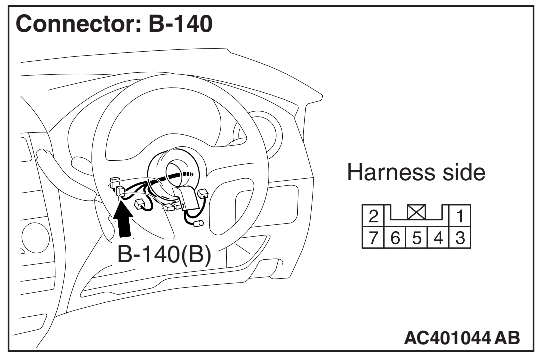


Q: Is the check result normal?

YES : Go to Step 10.
NO : Repair the defective connector.

Step 10. Check the wiring harness from B-133 ETACS-ECU connector terminal No.62 to B-140 key reminder switch connector terminal No.1





- Check the input and output lines for open circuit.

Q: Is the check result normal?

YES : Go to Step 11.
NO : Repair the wiring harness.

Step 11. Retest the system

Check that the ignition key cylinder illumination lamp illuminates/extinguishes normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Replace the ETACS-ECU.

Main Index
Group TOC

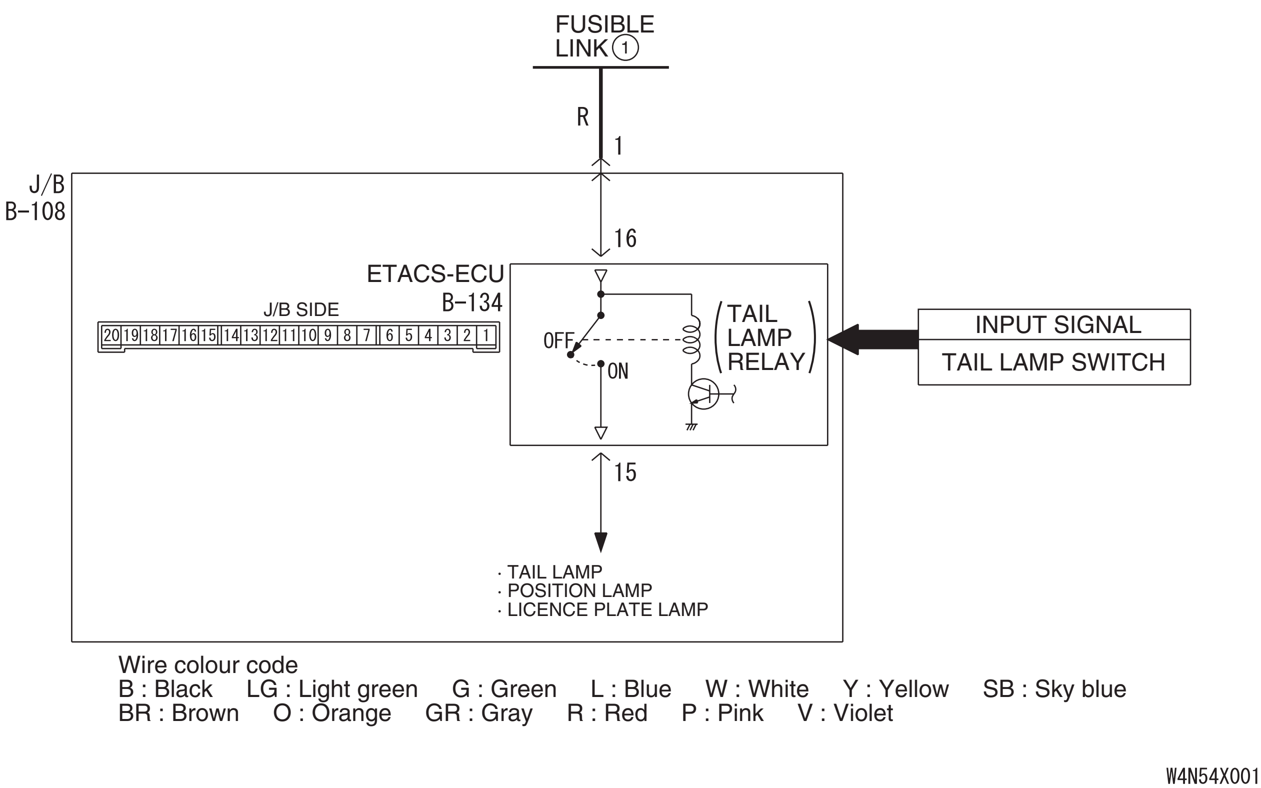
HEADLAMP AND TAIL LAMP

INSPECTION PROCEDURE J-1: The tail lamps do not illuminate normally.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Tail Lamp Relay Circuit



COMMENTS ON TROUBLE SYMPTOM

If all the tail lamps do not illuminate, the tail lamp switch input circuit or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

Main Index

Group TOC

DIAGNOSIS PROCEDURE

Step 1. ECU check by using the SWS monitor.

Check that the power supply and earth lines to the column switch (column-ECU) and the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

ECU TO BE CHECKED

- COLUMN ECU
- ETACS ECU

OK: "OK" are displayed for all the items

Q: Are the check results normal?

"OK" are displayed for all the items : Go to Step 2.

"NG" is displayed on the "COLUMN ECU" menu. : Refer to Inspection Procedure A-2 "Communication with column switch (column-ECU) is not possible P.54C-37."

"NG" is displayed on the "ETACS ECU" menu. : Refer to Inspection Procedure A-3 "Communication with ETACS-ECU is not possible P.54C-41."

Step 2. Function diagnosis by using the SWS monitor

Check the SWS communication signal, which are related to the tail lamps.

<Selected item> LIGHTING - TAIL LAMP

- Ignition switch: ON
- Lighting switch: TAIL

Item No.	Item name	Normal condition
Item 00	HEADLAMP SW	OFF
Item 01	TAIL LAMP SW	ON
Item 03	PASSING SW	OFF
Item 30	IG SW(IG1)	ON

OK: Normal conditions are displayed for all the items

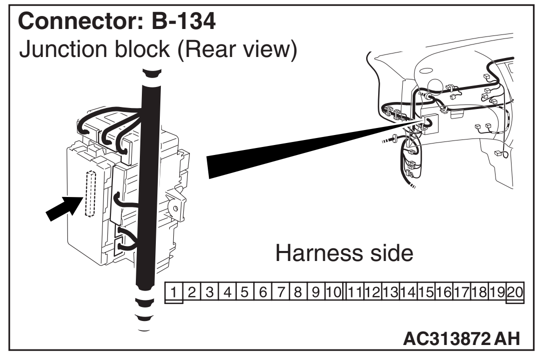
Q: Are the check results normal?

Normal conditions are displayed for all the items. : Go to Step 3.

Normal condition is not displayed for item 00, 01 or 03. : Refer to inspection procedure N-4 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54C-208."

Normal condition is not displayed for item No.30. : Refer to inspection procedure N-2 "The ignition switch (IG1) signal is not received P.54C-203."

Step 3. Connector check: B-134 ETACS-ECU connector.

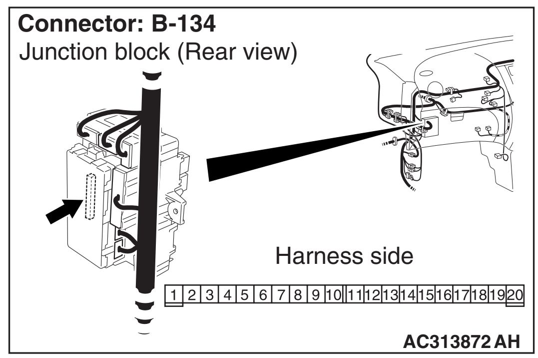


Q: Is the check result normal?

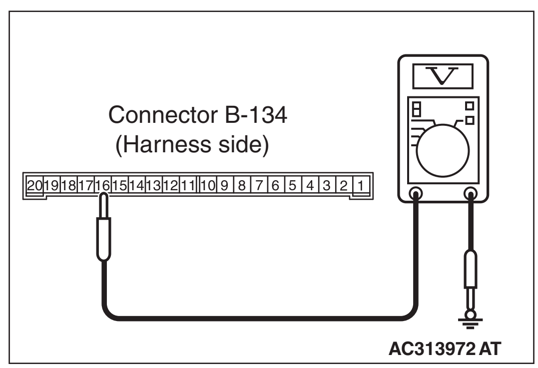
YES : Go to Step 4.

NO : Repair the defective connector.

Step 4. Voltage measurement at B-134 ETACS-ECU connector.



(1) Remove the ETACS-ECU, and measure at the junction block side.



(2) Voltage between B-134 ETACS-ECU connector terminal No.16 and body earth

OK: System voltage

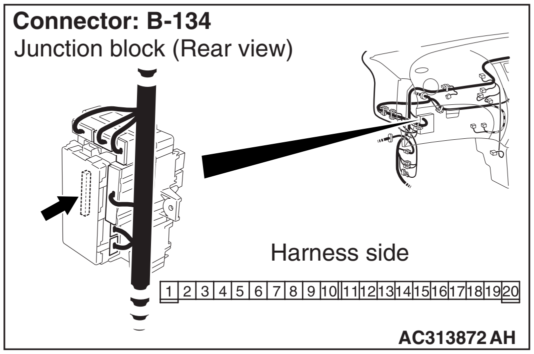
Q: Is the check result normal?

YES : Go to Step 6.

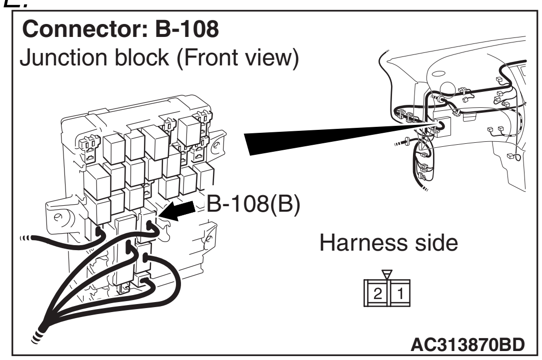
NO : Go to Step 5.

Main Index
Group TOC

Step 5. Check the wiring harness between B-134 ETACS-ECU connector terminal No.16 and the fusible link (1).



NOTE:



Prior to the wiring harness inspection, check junction block connector B-108, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 6. Retest the system.

Check that the tail lamps illuminate normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

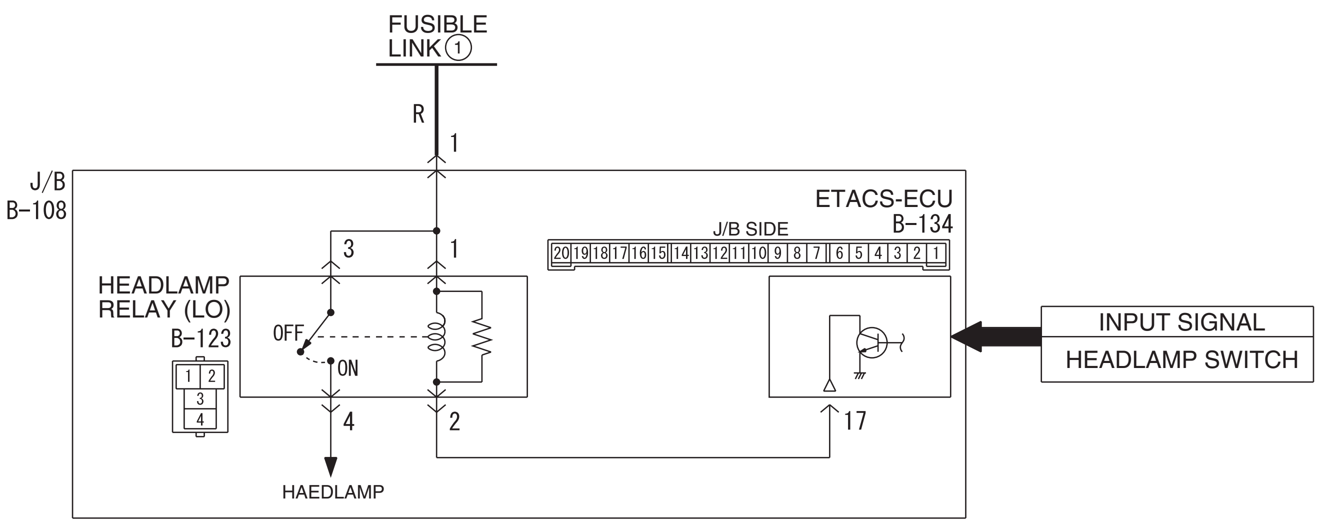
Main Index
Group TOC

INSPECTION PROCEDURE J-2: The low-beam headlamps do not illuminate normally.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Headlamp Relay (Low-Beam) Circuit



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4N54L000A

COMMENTS ON TROUBLE SYMPTOM

If the low-beam headlamps do not illuminate, the headlamp switch input circuit, the headlamp relay (LO) or the ETACS-ECU may be defective. If the SWS monitor ECU check shows "NG", also check the headlamp backup circuit (from column switch connector terminal No.10 to ETACS-ECU connector terminal No.60) and repair if necessary.

POSSIBLE CAUSES

- Malfunction of the headlamp relay (LO)
- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. ECU check by using the SWS monitor

Check that the power supply and earth lines to the column switch (column-ECU) and the front-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

ECU TO BE CHECKED

- COLUMN ECU
- ETACS ECU

OK: "OK" are displayed for all the items

Q: Are the check results normal?

"OK" are displayed for all the items : Go to Step 2.

"NG" is displayed on the "COLUMN ECU" menu. : Refer to Inspection Procedure A-2 "Communication with column switch (column-ECU) is not possible P.54C-37."

"NG" is displayed on the "ETACS ECU" menu. : Refer to Inspection Procedure A-3 "Communication with ETACS-ECU is not possible P.54C-41."

Main Index
Group TOC

Step 2. Function diagnosis by using the SWS monitor

Check the SWS communication signal, which are related to the low-beam headlamps.

<Selected item> LIGHTING - HEADLAMP LO

- Ignition switch: ON
- Lighting switch: HEAD

Item No.	Item name	Normal condition
Item 00	HEADLAMP SW	ON
Item 03	PASSING SW	OFF
Item 30	IG SW(IG1)	ON

OK: Normal conditions are displayed for all the items

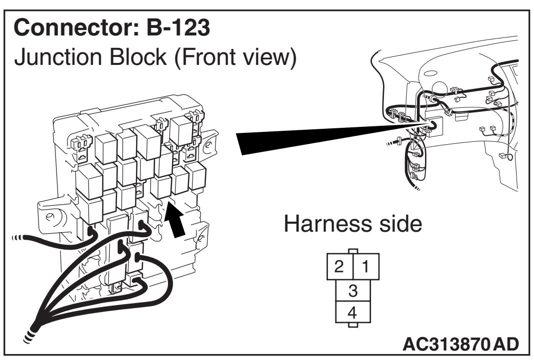
Q: Are the check results normal?

Normal conditions are displayed for all the items. : Go to Step 3.

Normal condition is not displayed for item No.00 or 03. : Refer to inspection procedure N-4 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54C-208."

Normal condition is not displayed for item No.30. : Refer to inspection procedure N-2 "The ignition switch (IG1) signal is not received P.54C-203."

Step 3. Connector check: B-123 headlamp relay (LO) connector



Q: Is the check result normal?

YES : Go to Step 4.
NO : Repair the defective connector.

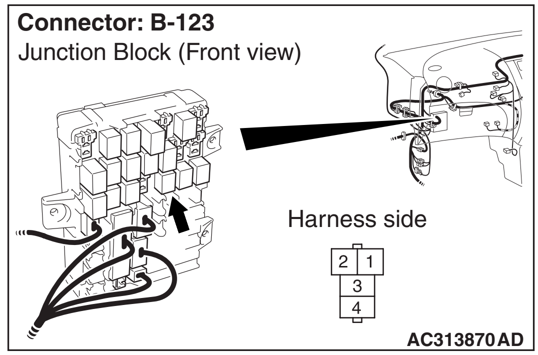
Step 4. Check the headlamp relay (LO).

Refer to GROUP 54A – Headlamp P.54A-74.

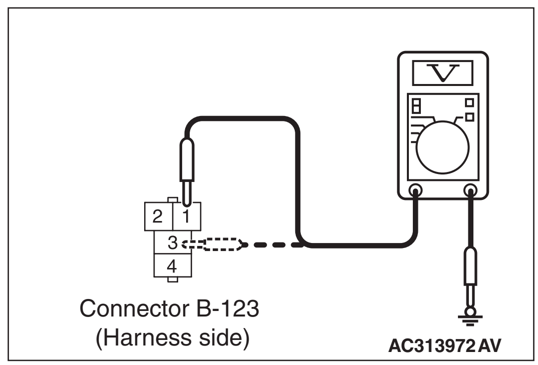
Q: Is the check result normal?

YES : Go to Step 5.
NO : Replace the headlamp relay (LO).

Step 5. Voltage measurement at B-123 headlamp relay (LO) connector.



(1) Remove the headlamp relay (LO), and measure at the junction block side.



(2) Voltage between B-123 headlamp relay (LO) connector terminal Nos.1, 3 and body earth

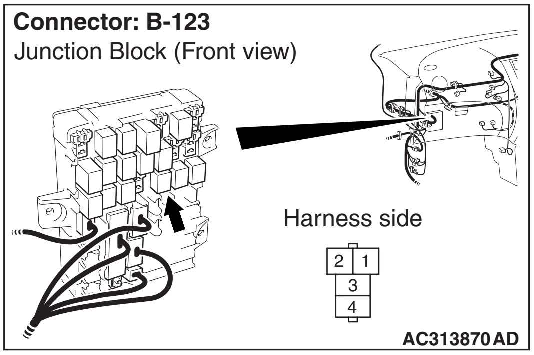
OK: System voltage

Q: Is the check result normal?

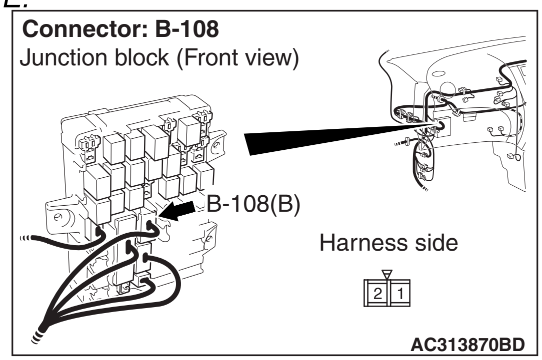
YES : Go to Step 7.
NO : Go to Step 6.

Main Index
Group TOC

Step 6. Check the wiring harness between B-123 headlamp relay (LO) connector terminal Nos.1, 3 and the fusible link (1).



NOTE:



Prior to the wiring harness inspection, check the junction block connector B-108, and repair if necessary.

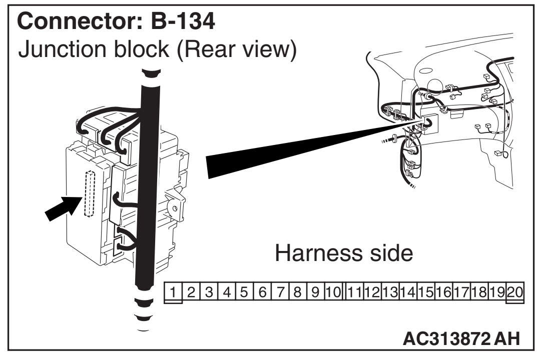
- Check the power supply line from the fusible link (1) for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 7. Connector check: B-134 ETACS-ECU connector



Q: Is the check result normal?

YES : Go to Step 8.

NO : Repair the defective connector.

Step 8. Retest the system.

Check that the low-beam headlamps illuminate normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

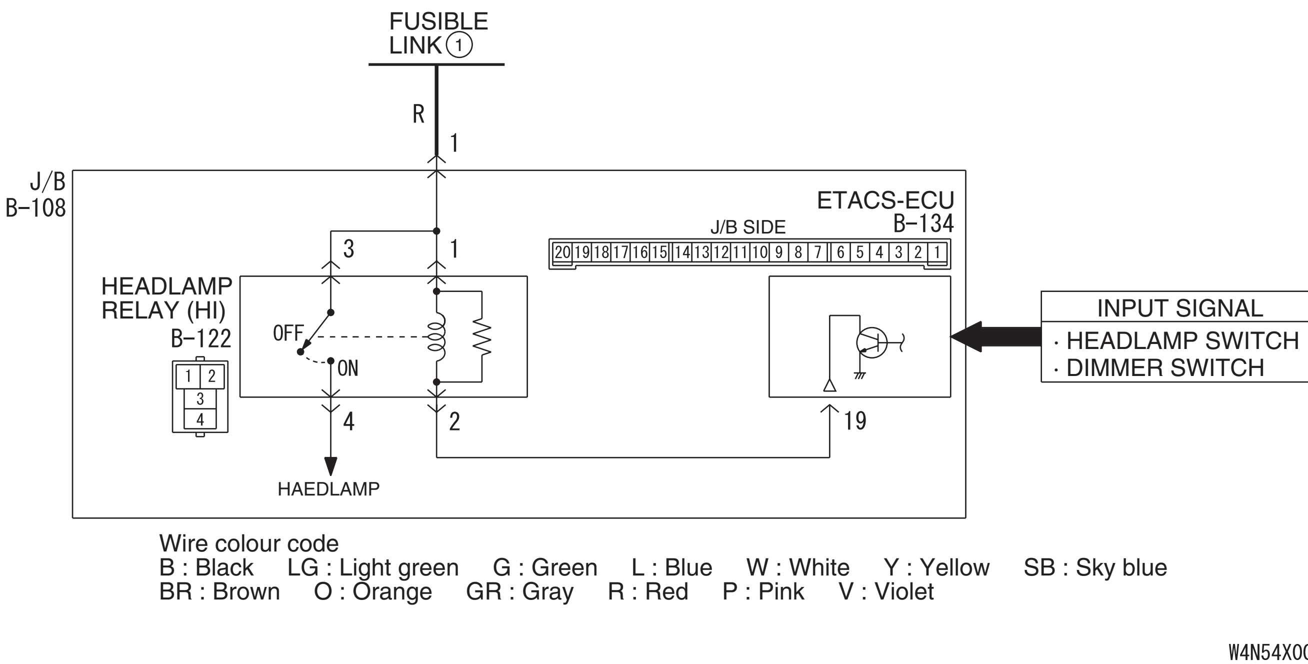
NO : Replace the ETACS-ECU.

Main Index
Group TOC

INSPECTION PROCEDURE J-3: The high-beam headlamps do not illuminate normally.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Headlamp Relay (High-Beam) Circuit



COMMENTS ON TROUBLE SYMPTOM

If the high-beam headlamps do not illuminate, the headlamp switch input circuit, the headlamp relay (HI) or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the headlamp relay (HI)
- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. ECU check by using the SWS monitor

Check that the power supply and earth lines to the column switch (column-ECU) and the front-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

ECU TO BE CHECKED

- COLUMN ECU
- ETACS ECU

OK: "OK" are displayed for all the items

Q: Are the check results normal?

"OK" are displayed for all the items : Go to Step 2.

"NG" is displayed on the "COLUMN ECU" menu. : Refer to Inspection Procedure A-2 "Communication with column switch (column-ECU) is not possible P.54C-37."

"NG" is displayed on the "ETACS ECU" menu. : Refer to Inspection Procedure A-3 "Communication with ETACS-ECU is not possible P.54C-41."

Main Index
Group TOC

Step 2. Function diagnosis by using the SWS monitor

Check the SWS communication signal, which are related to the high-beam headlamps.

<Selected item> LIGHTING - HEADLAMP HI

- Ignition switch: ON
- Lighting switch: HEAD
- Dimmer switch: from OFF to ON, and then to OFF again

Item No.	Item name	Normal condition
Item 00	HEADLAMP SW	ON
Item 02	DIMMER SW	from OFF to ON, and then to OFF again ("ON" should be displayed when the dimmer switch is operated)
Item 03	PASSING SW	OFF
Item 30	IG SW(IG1)	ON

OK: Normal conditions are displayed for all the items

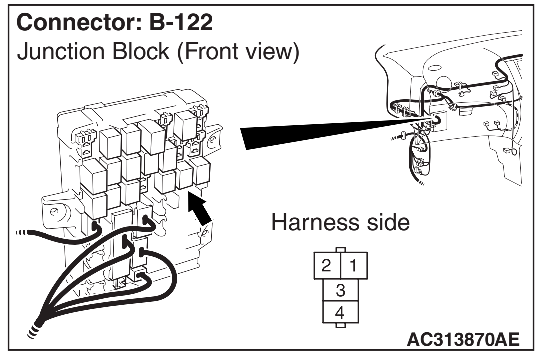
Q: Are the check results normal?

Normal conditions are displayed for all the items. : Go to Step 3.

Normal condition is not displayed for item Nos.00, 02 or 03. : Refer to inspection procedure N-4 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54C-208."

Normal condition is not displayed for item No.30. : Refer to inspection procedure N-2 "The ignition switch (IG1) signal is not received P.54C-203."

Step 3. Connector check: B-122 headlamp relay (HI) connector



Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair the defective connector.

Step 4. Check the headlamp relay (HI).

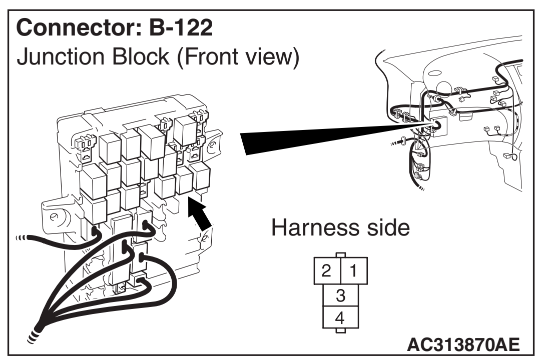
Refer to GROUP 54A – Headlamp P.54A-74.

Q: Is the check result normal?

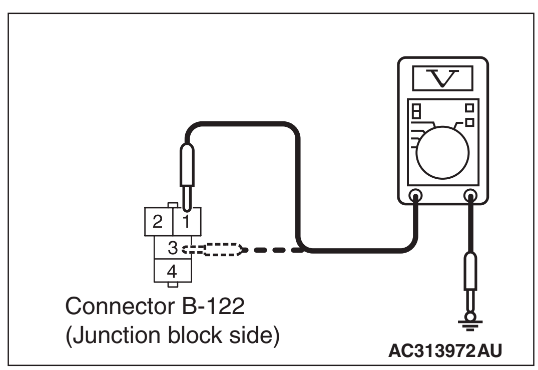
YES : Go to Step 5.

NO : Replace the headlamp relay (HI).

Step 5. Voltage measurement at B-122 headlamp relay (HI) connector.



(1) Remove the headlamp relay (HI), and measure at the junction block side.



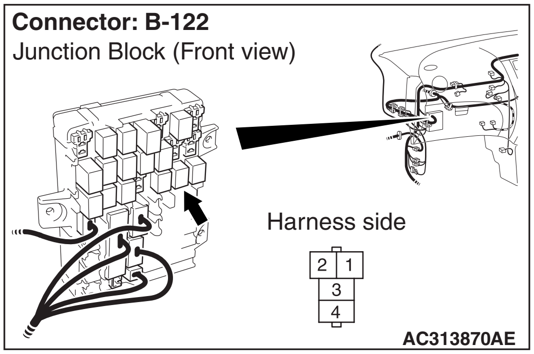
(2) Voltage between B-122 headlamp relay (HI) connector terminal Nos.1, 3 and body earth

OK: System voltage

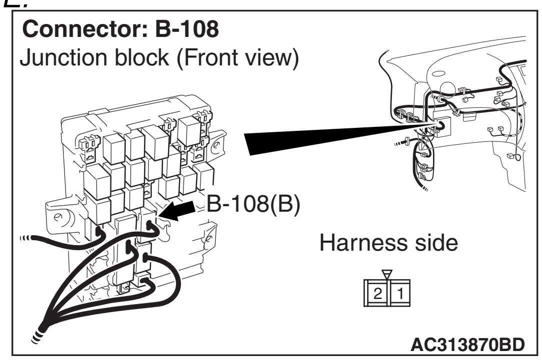
Main Index
Group TOC

Q: Is the check result normal?
YES : Go to Step 7.
NO : Go to Step 6.

Step 6. Check the wiring harness between B-122 headlamp relay (HI) connector terminal Nos.1, 3 and the fusible link (1).



NOTE:

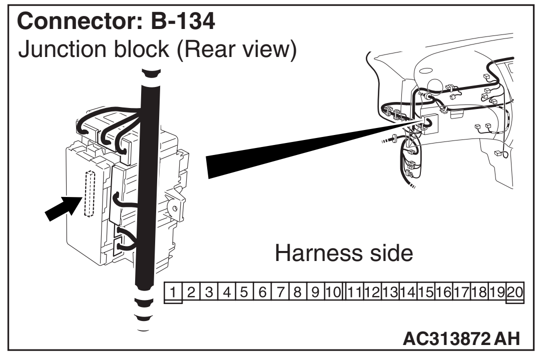


Prior to the wiring harness inspection, check the junction block connector B-108, and repair if necessary.

- Check the power supply line from the fusible link (1) for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Repair the wiring harness.

Step 7. Connector check: B-134 ETACS-ECU connector



Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the defective connector.

Step 8. Retest the system.

Check that the low-beam headlamps illuminate normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Replace the ETACS-ECU.

Main Index
Group TOC

INSPECTION PROCEDURE J-4: The high-beam and low-beam headlamps do not illuminate when the passing switch is operated.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the low-beam and high-beam headlamps are normal, the passing switch input signal circuit or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the operation of the headlamps.

Check that the low-beam and high-beam headlamps illuminate normally.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the headlamps. Refer to trouble symptom chart P.54C-29.

Step 2. SWS monitor data list.

Check the ETACS-ECU signals which are related to the headlamps.

<Selected item> COLUMN ECU

- Passing lamp switch: ON

Item No.	Item name	Normal condition
Item 03	PASSING SW	ON

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Refer to inspection procedure N-4 "The column switch (lighting and turn-signal lamp switch) signal is not received P.54C-208."

Step 3. Retest the system.

When the passing switch is turned on, check if the headlamps illuminate normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

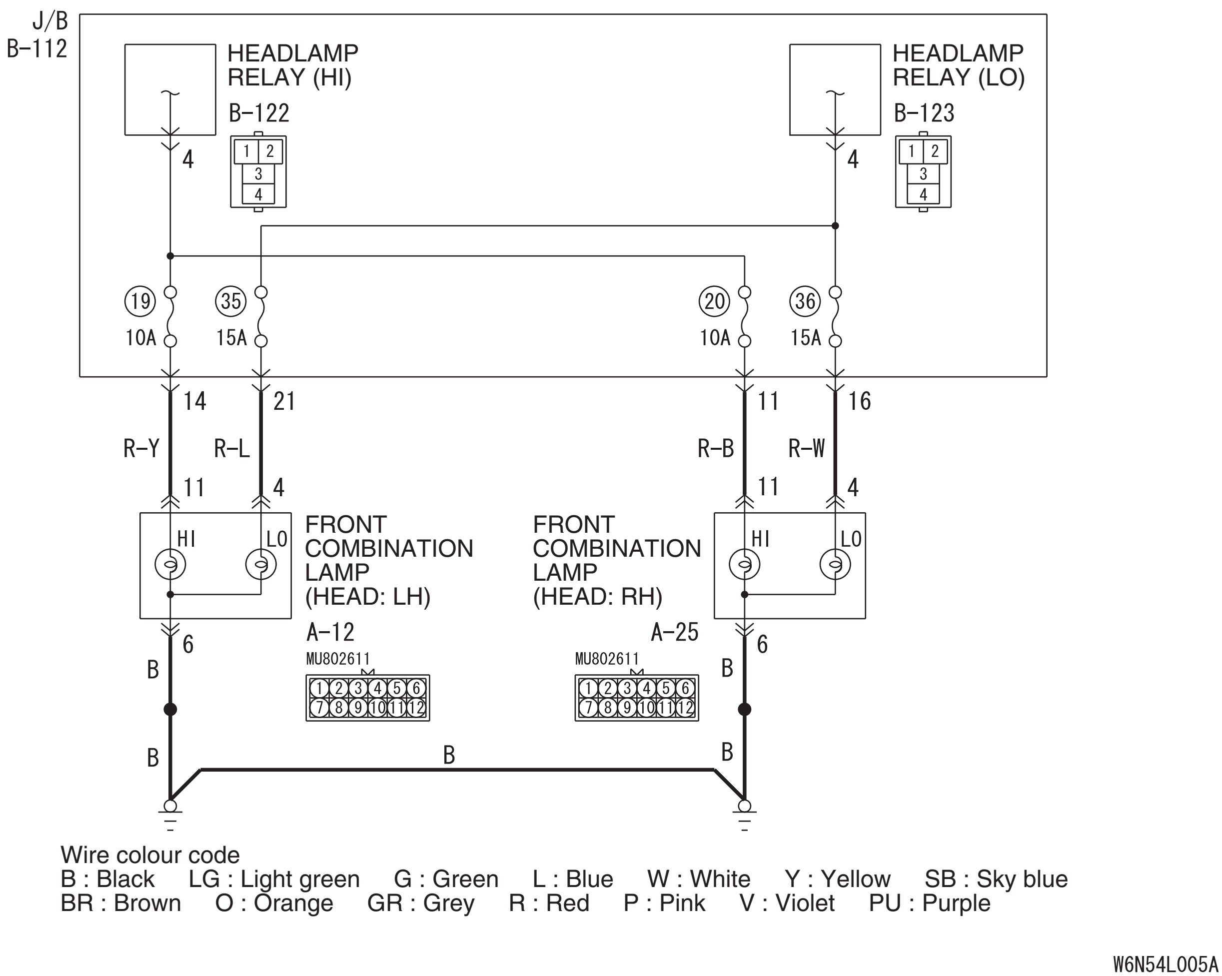
NO : Replace the ETACS-ECU.

Main Index
Group TOC

INSPECTION PROCEDURE J-5: The headlamp(s) do not illuminate.

⚠ **CAUTION**
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Headlamps Circuit



COMMENTS ON TROUBLE SYMPTOM

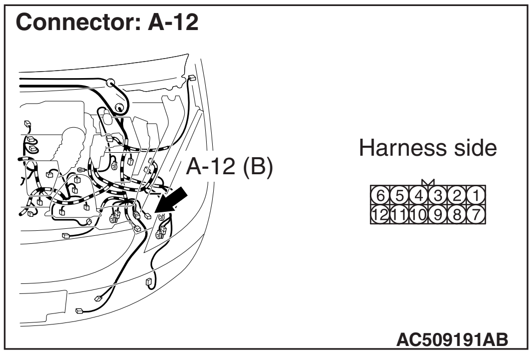
If any of the headlamps does not illuminate, the wiring harness connector(s), the bulb or the fuse may be defective or burned out.

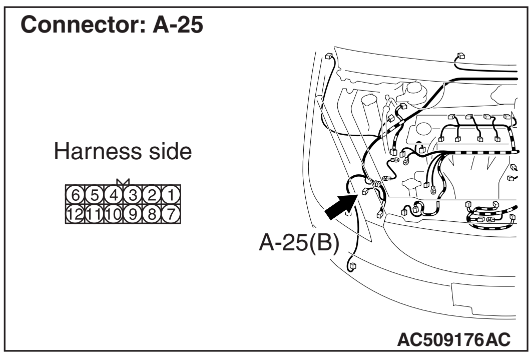
POSSIBLE CAUSES

- Malfunction of the headlamp bulbs
- Damaged harness wires and connectors

DIAGNOSTIC PROCEDURE

Step 1. Connector check: A-12 front combination lamp (HEAD: LH) connector or A-25 front combination lamp (HEAD: RH) connector

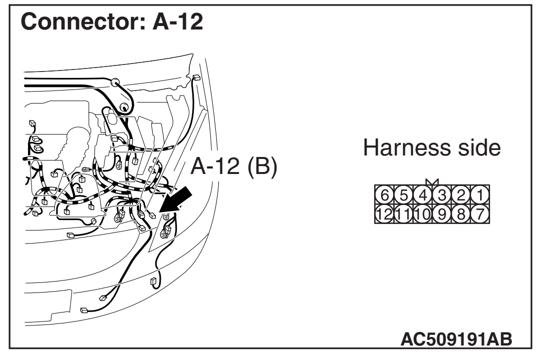


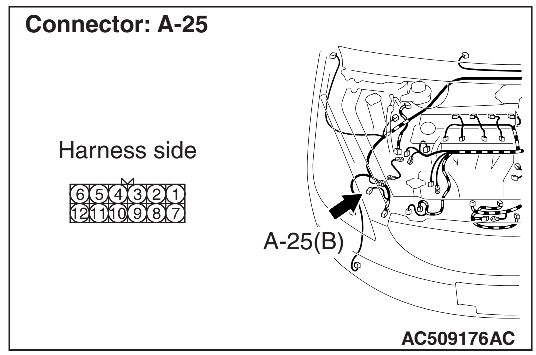


Q: Is the check result normal?

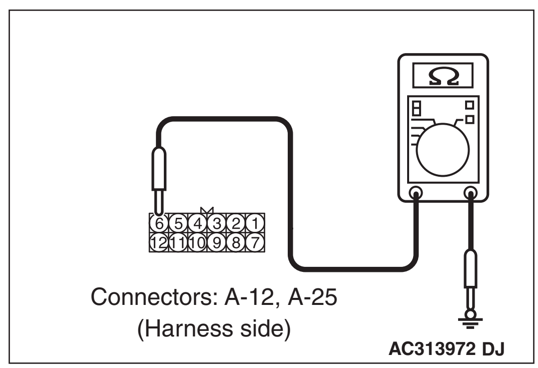
YES (Either of LH side and RH side does not illuminate) : Go to Step 2.
YES (Low-beam of LH side or RH side does not illuminate) : Go to Step 5.
YES (High-beam of LH side or RH side does not illuminate) : Go to Step 9.
NO (the connectors are not in good condition) : Repair the defective connector.

Step 2. Resistance measurement at the A-12 front combination lamp (HEAD: LH) connector or the A-25 front combination lamp (HEAD: RH) connector.





(1) Disconnect the connector, and measure at the wiring harness side.



(2) Check the resistance between the lamp connector and body earth.
- Resistance between A-12 front combination lamp (HEAD: LH) connector terminal No.6 and body earth
- Resistance between A-25 front combination lamp (HEAD: RH) connector terminal No.6 and body earth

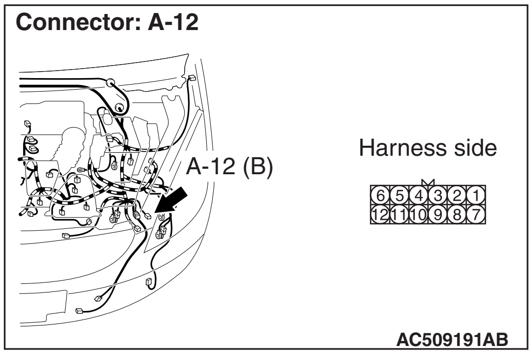
OK: Continuity exists (2 Ω or less)

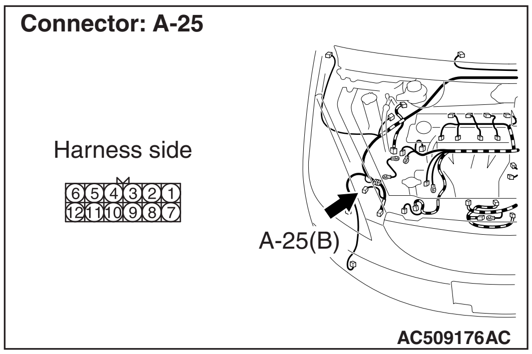
Q: Is the check result normal?

YES : Go to Step 4.
NO : Go to Step 3.

Main Index
Group TOC

Step 3. Check the wiring harness from A-12 front combination lamp (HEAD: LH) connector terminal No.6 or A-25 front combination lamp (HEAD: RH) connector terminal No.6 to body earth.





- Check the earth wires for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 4. Retest the system.

(1) Replace the socket of the defective headlamp.
(2) Check that the headlamps illuminate normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the front combination lamp.

Step 5. Check the bulb(s) of the headlamps.

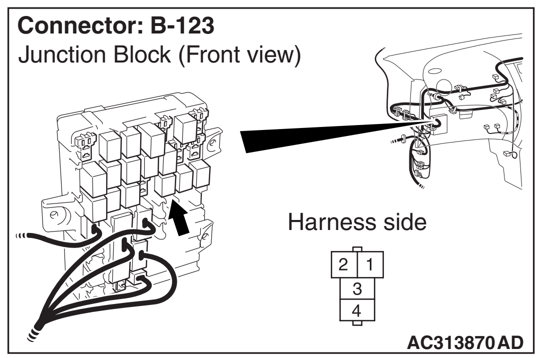
Check the bulb(s) of the defective lamp.

Q: Is the check result normal?

YES : Go to Step 6.

NO : Replace the bulb(s) of the defective lamp.

Step 6. Connector check: B-123 headlamp relay (LO) connector



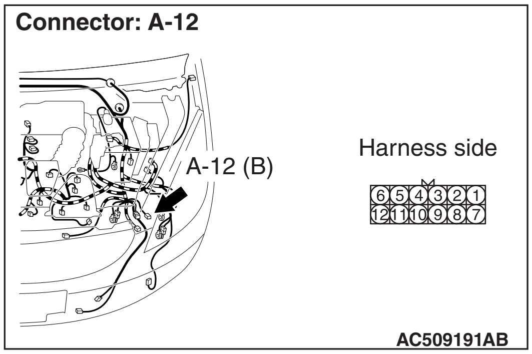
Q: Is the check result normal?

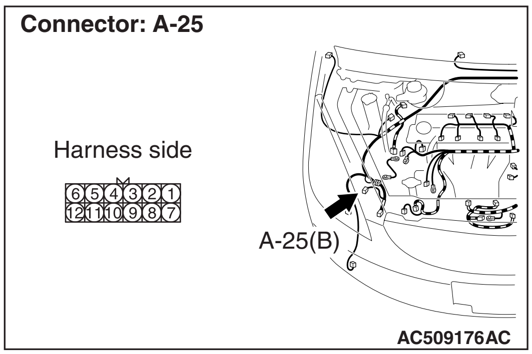
YES : Go to Step 7.

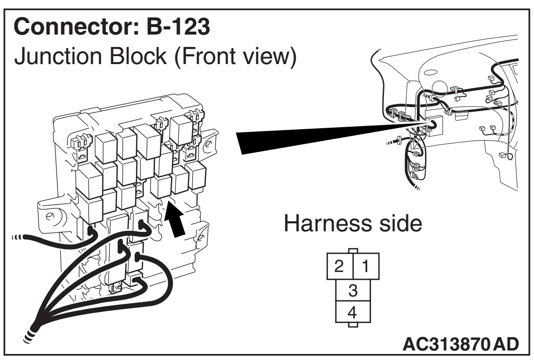
NO : Repair the defective connector.

Main Index
Group TOC

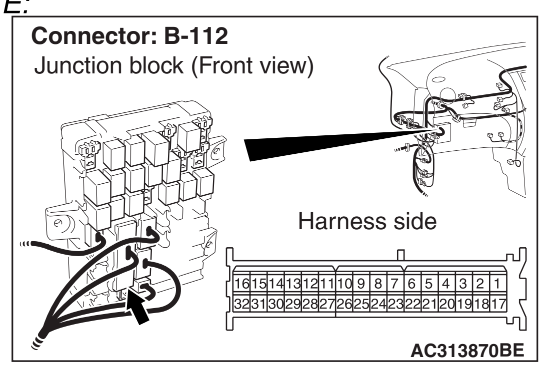
Step 7. Check the wiring harness from A-12 front combination lamp (HEAD: LH) connector terminal No.4 or A-25 front combination lamp (HEAD: RH) connector terminal No.4 to B-123 headlamp relay (LO) connector terminal No.4.







NOTE:



Prior to the wiring harness inspection, check junction block connector B-112, and repair if necessary.

- Check the output lines for open circuit.

Q: Is the check result normal?

YES : Go to Step 8.

NO : Repair the wiring harness.

Step 8. Retest the system.

(1) Replace the socket of the defective headlamp.

(2) Check that the headlamps illuminate normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the front combination lamp.

Step 9. Check the bulb(s) of the headlamps.

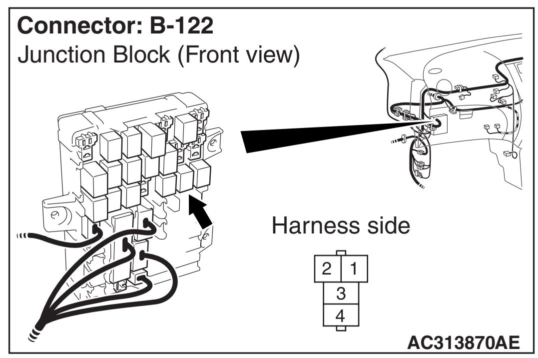
Check the bulb(s) of the defective lamp.

Q: Is the check result normal?

YES : Go to Step 10.

NO : Replace the bulb(s) of the defective lamp.

Step 10. Connector check: B-122 headlamp relay (HI) connector



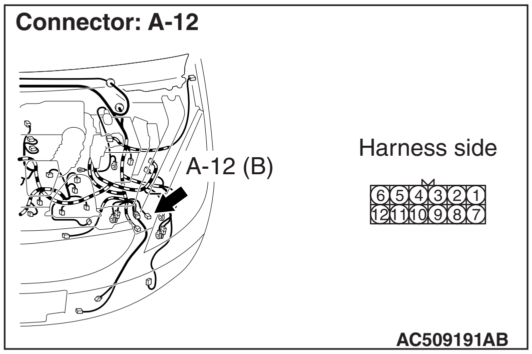
Q: Is the check result normal?

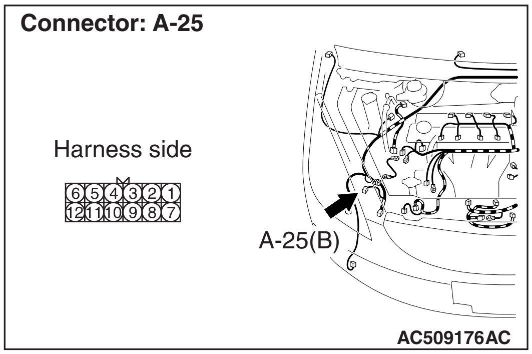
YES : Go to Step 11.

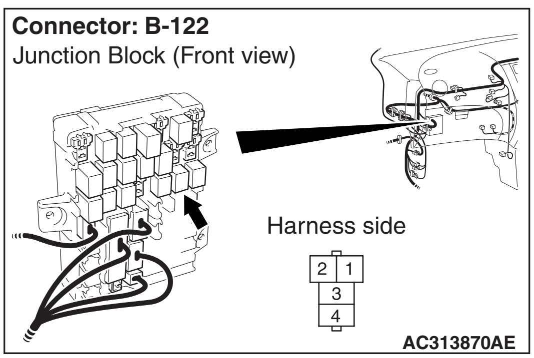
NO : Repair the defective connector.

Main Index
Group TOC

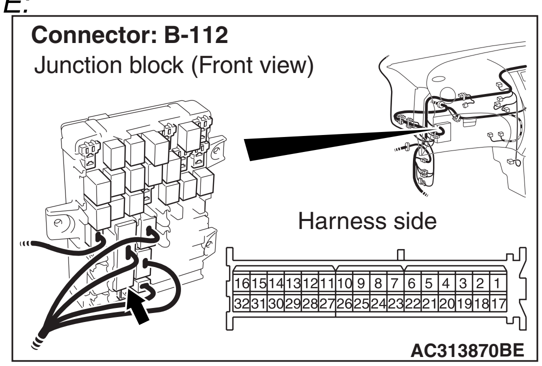
Step 11. Check the wiring harness from A-12 front combination lamp (HEAD: LH) connector terminal No.11 or A-25 front combination lamp (HEAD: RH) connector terminal No.11 to B-122 headlamp relay (HI) connector terminal No.4.







NOTE:



Prior to the wiring harness inspection, check junction block connector B-112, and repair if necessary.

- Check the output lines for open circuit.

Q: Is the check result normal?

YES : Go to Step 12.

NO : Repair the wiring harness.

Step 12. Retest the system.

(1) Replace the socket of the defective headlamp.

(2) Check that the headlamps illuminate normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

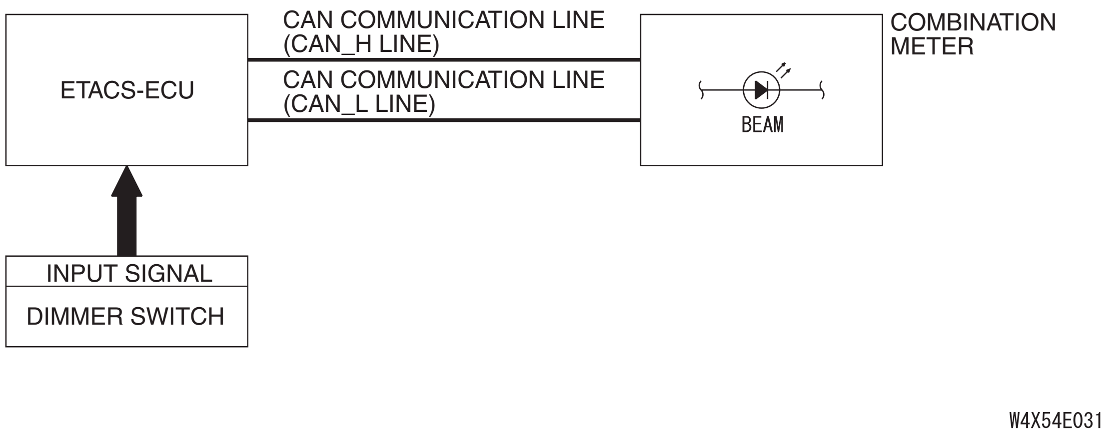
NO : Replace the front combination lamp.

Main Index
Group TOC

INSPECTION PROCEDURE J-6: The high-beam indicator lamp does not illuminate.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

High-Beam Indicator Lamp Circuit



COMMENTS ON TROUBLE SYMPTOM

If the high beam indicator does not illuminate normally, connector(s), wiring harness in the CAN bus lines, the ETACS-ECU or the combination meter may be defective.

POSSIBLE CAUSES

- Malfunction of the combination meter
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the headlamps.

When the lighting switch is operated, check that the headlamps illuminate/go off normally.

Q: Are the headlamps in good condition?
YES : Go to Step 2.
NO : First, repair the headlamps. Refer to Inspection Procedure J-3 "The high-beam headlamps do not illuminate normally P.54C-143."

Step 2. M.U.T.-III CAN bus diagnostics.

Use the M.U.T.-III to diagnose the CAN bus lines.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the CAN bus line (Refer to GROUP 54D, Diagnosis P.54D-13).

Step 3. M.U.T.-III other system diagnosis code.

Check whether the combination meter-related diagnosis code is set.

Q: Is the diagnosis code set?
YES : Diagnose the combination meter (Refer to GROUP 54A – Troubleshooting P.54A-31).
NO : Go to Step 4.

Step 4. ECU check by using the SWS monitor

Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

ECU TO BE CHECKED

- ETACS ECU

OK: "OK" is displayed on the "ETACS ECU" menu.

Q: Is the check result normal?
YES : Go to Step 5.
NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Main Index
Group TOC

Step 5. M.U.T.-III actuator test

Perform the actuator test for the combination meter, and check that the high-beam indicator illuminates (Refer to GROUP 54A – Combination Meter P.54A-62).

Q: Is the check result normal?

YES : Replace the ETACS-ECU.

NO : Replace the combination meter.

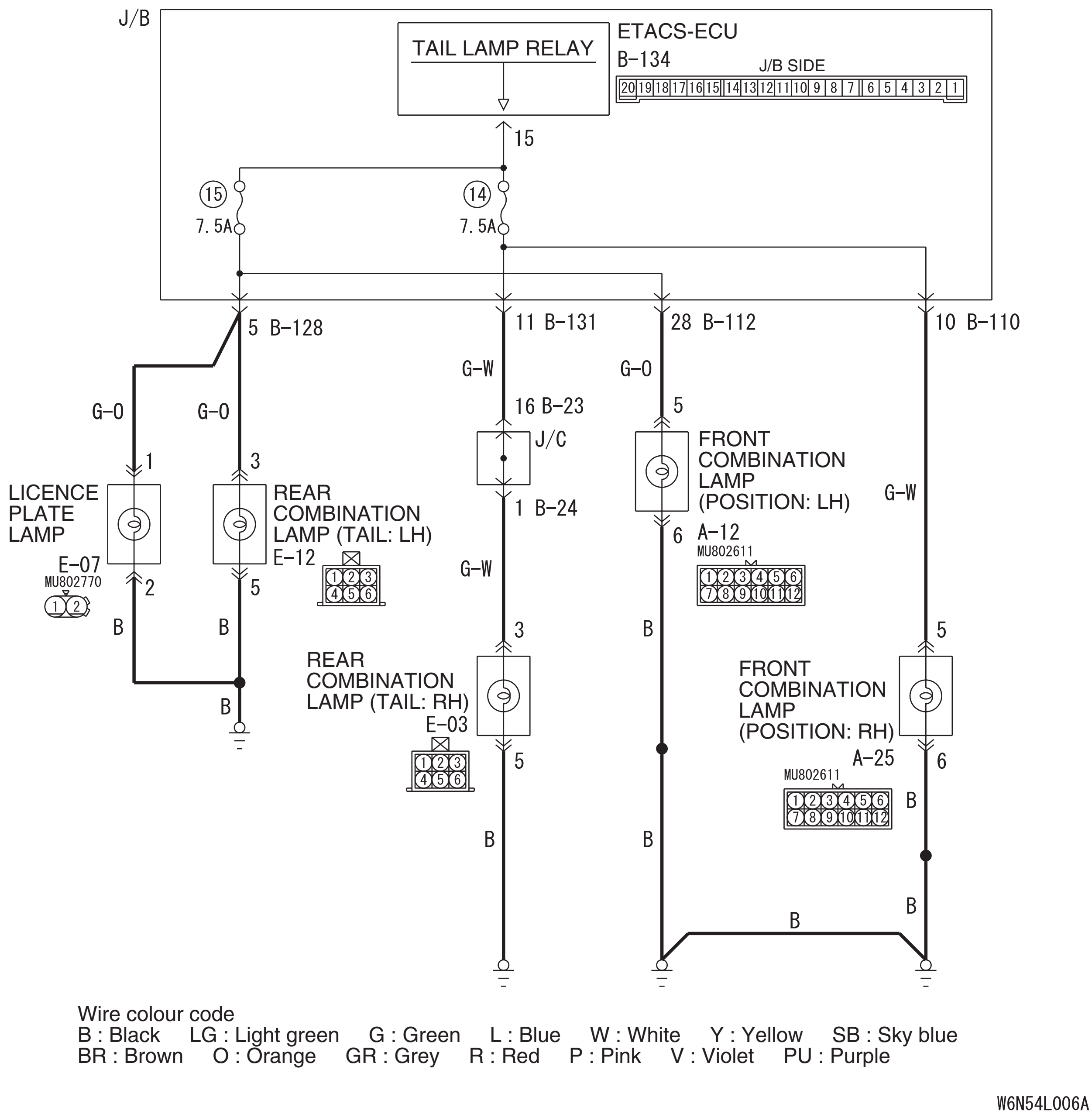
Main Index
Group TOC

INSPECTION PROCEDURE J-7: Any of tail lamps, position lamps or licence plate lamp does not illuminate.

⚠ **CAUTION**

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Tail Lamps, Position Lamps and Licence Plate Lamp Circuit



COMMENTS ON TROUBLE SYMPTOM

If the tail lamps, the position lamps or the licence plate lamps do not illuminate, the wiring harness connector(s), the bulb or the fuse may be defective or burned out.

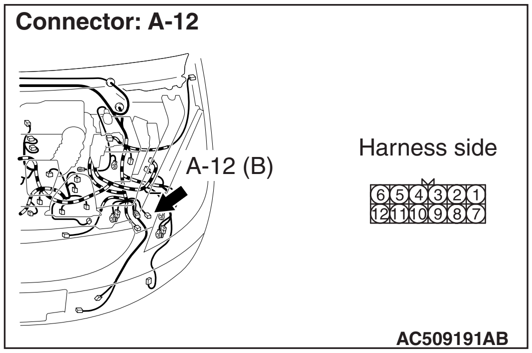
POSSIBLE CAUSES

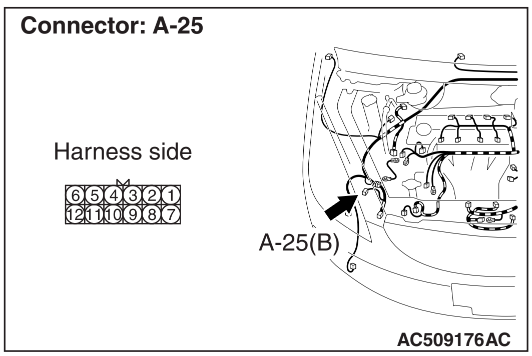
- Burned-out bulb
- Damaged harness wires and connectors

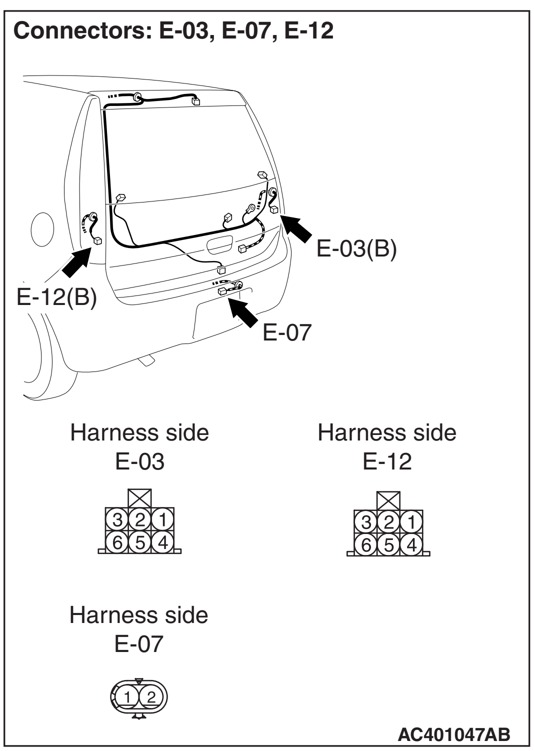
Main Index
Group TOC

DIAGNOSTIC PROCEDURE

Step 1. Connector check: E-12 rear combination lamp (tail: LH) connector or E-03 rear combination lamp (tail: RH) connector, A-12 front combination lamp (position: LH) connector or A-25 front combination lamp (position: RH) connector or E-07 licence plate lamp (LH) connector







Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the defective connector.

Step 2. Check the bulbs of the tail lamps, the position lamps or the licence plate lamps.

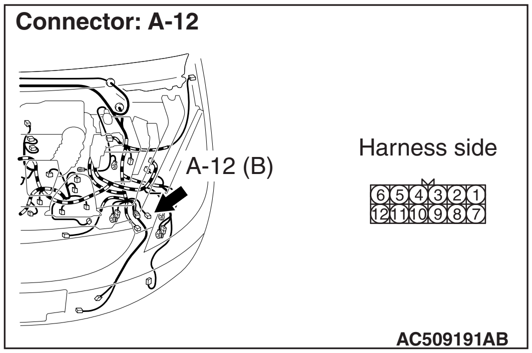
Check the bulb of the lamp which does not illuminate.

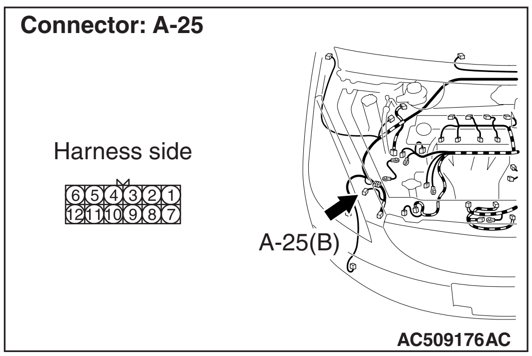
Q: Is the check result normal?

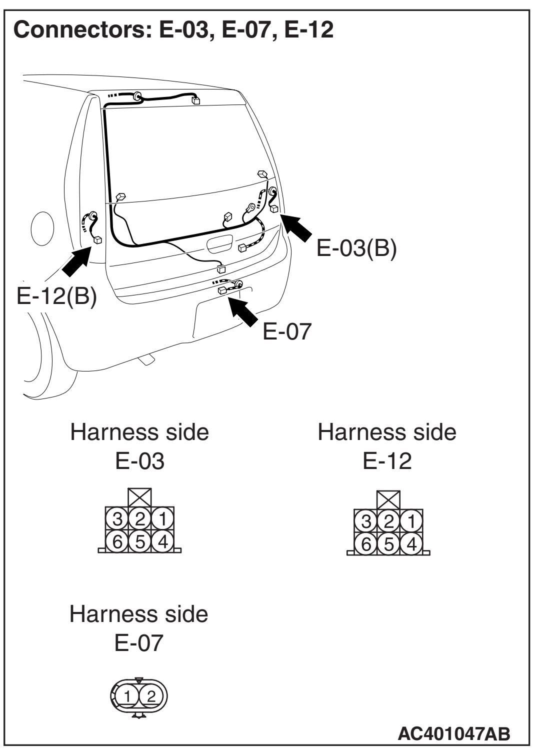
YES : Go to Step 3.

NO : Replace the bulb of the lamp which does not illuminate.

Step 3. Resistance measurement at the E-12 rear combination lamp (tail: LH) connector or E-03 rear combination lamp (tail: RH) connector, A-12 front combination lamp (position: LH) connector or A-25 front combination lamp (position: RH) connector or E-07 licence plate lamp (LH) connector.

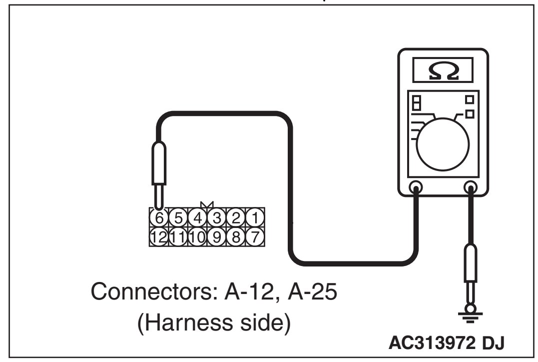






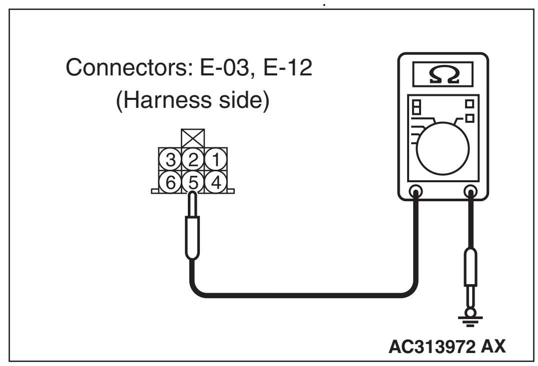
(1) Disconnect the connector, and measure at the wiring harness side.

(2) Check the resistance between the lamp connector and body earth.



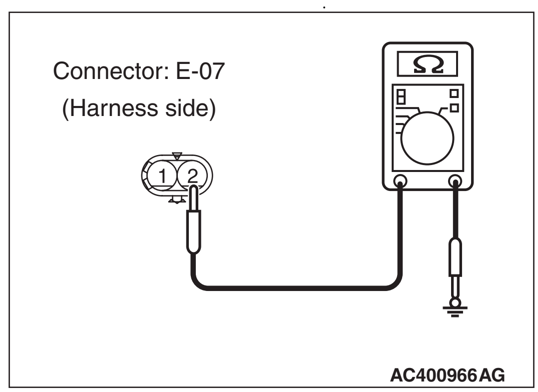
Resistance between A-12 front combination lamp (position: LH) connector terminal No.6 and body earth

- Resistance between A-25 front combination lamp (position: RH) connector terminal No.6 and body earth



Resistance between E-12 rear combination lamp (tail: LH) connector terminal No.5 and body earth

- Resistance between E-03 rear combination lamp (tail: RH) connector terminal No.5 and body earth



Resistance between E-07 licence plate lamp connector terminal No.2 and body earth

OK: Continuity exists (2 Ω or less)

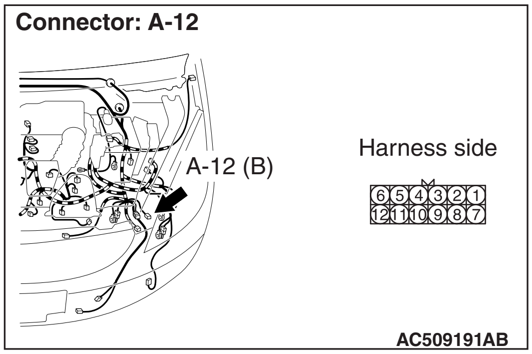
Q: Is the check result normal?

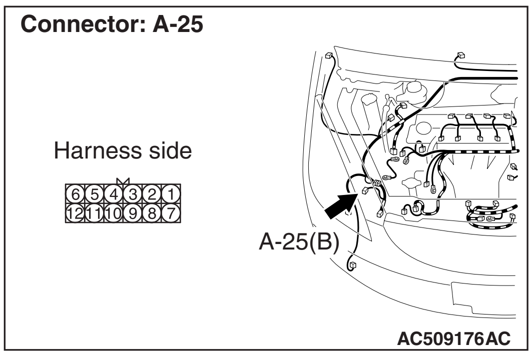
YES : Go to Step 5.

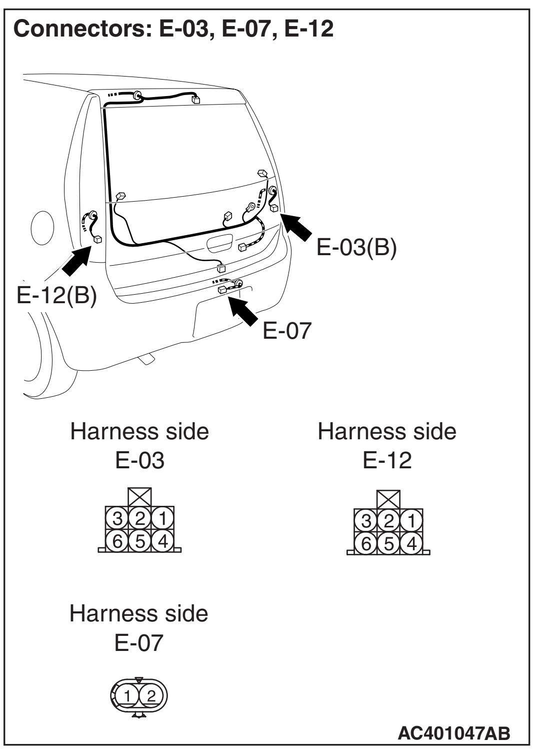
NO : Go to Step 4.

Main Index
Group TOC

Step 4. Check the wiring harness from E-12 rear combination lamp (tail: LH) connector terminal No.5 or E-03 rear combination lamp (tail: RH) connector terminal No.5, A-12 front combination lamp (position: LH) connector terminal No.6 or A-25 front combination lamp (position: RH) connector terminal No.6 or E-07 licence plate lamp (LH) connector terminal No.2 to body earth.



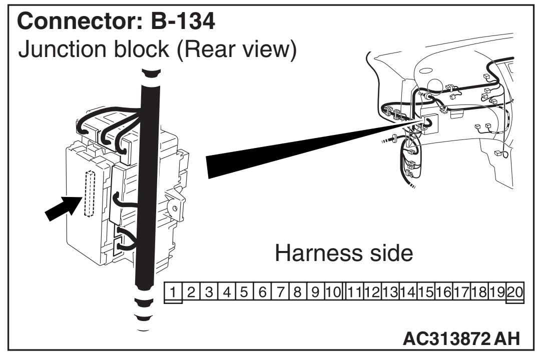




- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : Go to Step 5.
NO : Repair the wiring harness.

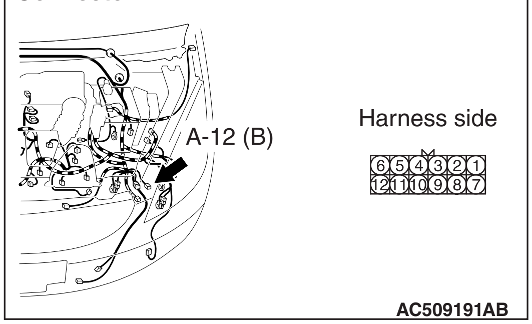
Step 5. Connector check: B-134 ETACS-ECU connector



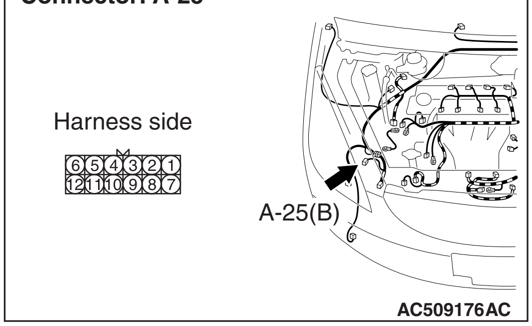
Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Check the wiring harness from E-12 rear combination lamp (tail: LH) connector terminal No.3 or E-03 rear combination lamp (tail: RH) connector terminal No.3, A-12 front combination lamp (position: LH) connector terminal No.5 or A-25 front combination lamp (position: RH) connector terminal No.5 or E-07 licence plate lamp (LH) connector terminal No.1 to B-134 ETACS-ECU connector terminal No.15.

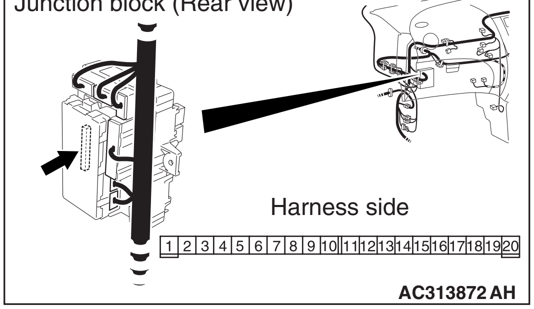
Connector: A-12



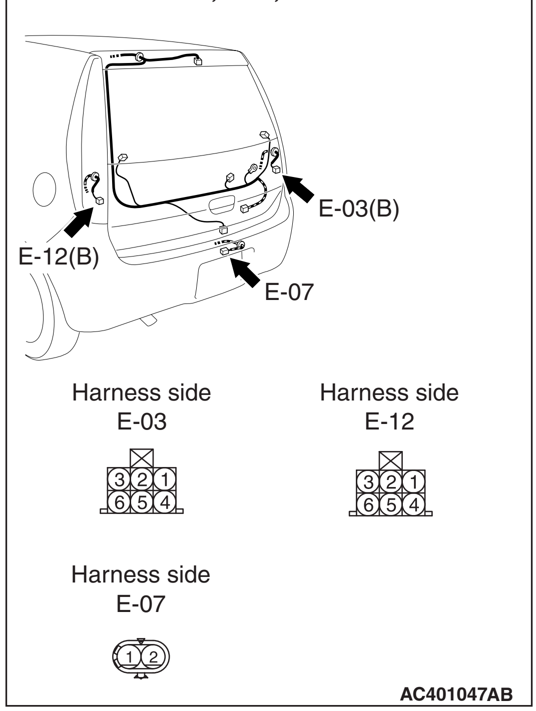
Connector: A-25



Connector: B-134
Junction block (Rear view)

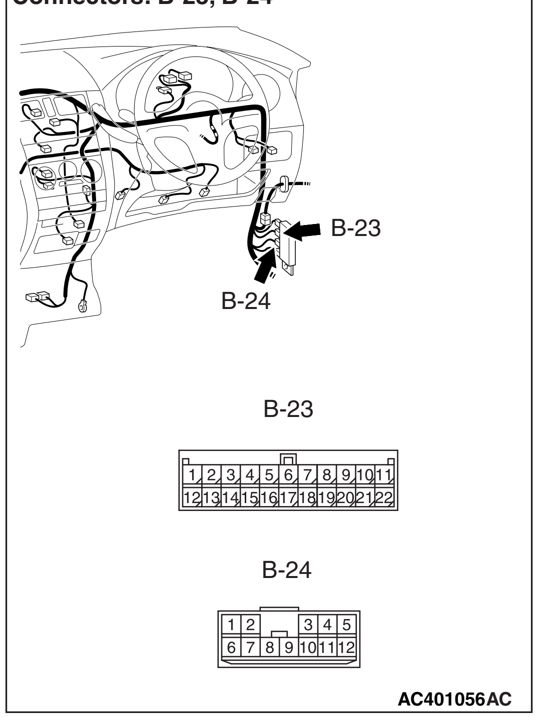


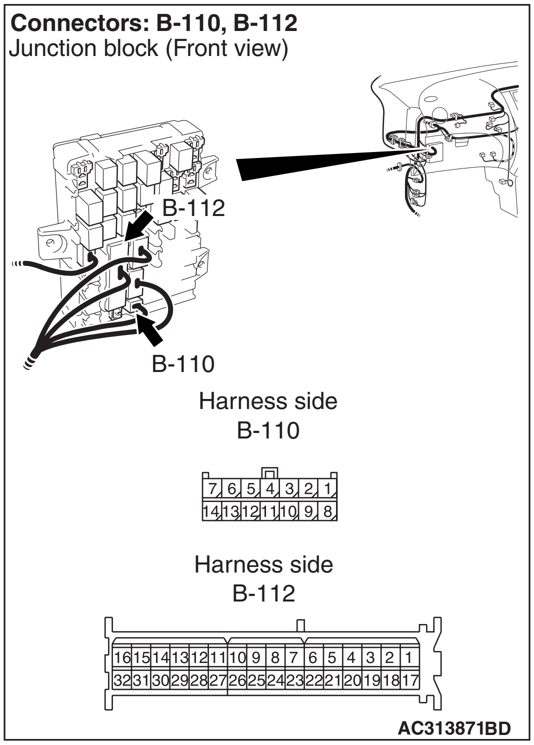
Connectors: E-03, E-07, E-12

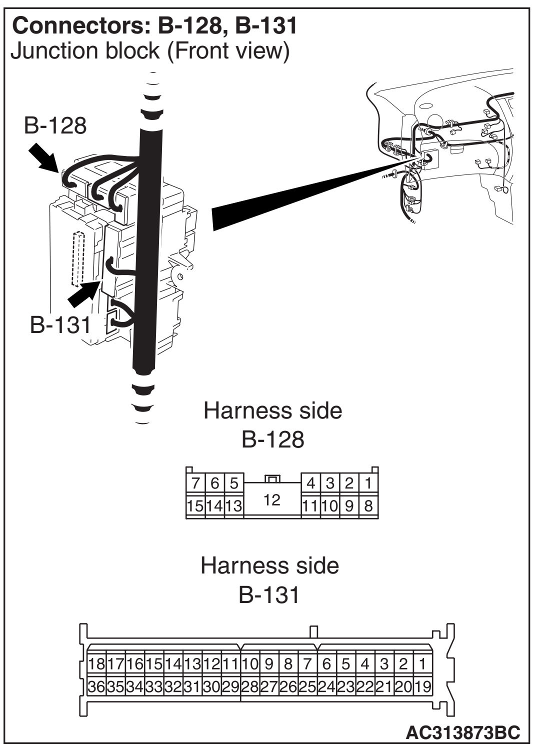


NOTE:

Connectors: B-23, B-24







Prior to the wiring harness inspection, check junction block connectors B-128 <tail lamp (LH) or licence plate lamp>, B-131 <tail lamp (RH)>, B-112 <position lamp (LH)>, B-110 <position lamp (RH)>, joint connector B-23 and B-24, and repair if necessary.

- Check the output lines for open circuit.

Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the wiring harness.

Step 7. Retest the system.

Check that the tail/stop lamps, the position lamps and the licence plate lamps illuminate normally.

Q: Is the check result normal?

The lamps illuminate normally at both high and low beams. : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

When the tail lamps do not illuminate : Replace the tail lamp socket.

When the position lamps do not illuminate : Replace the position lamp socket.

When the licence plate lamps do not illuminate : Replace the licence plate lamp socket.

Main Index
Group TOC

INSPECTION PROCEDURE J-8: The headlamps do not illuminate when the lamping switch is at "TAIL" or "PASSING" position, but illuminate only at low beam when the switch is at "HEAD" position. However, the headlamps do not illuminate at high beam.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the headlamps illuminate only at low beam regardless of the lighting switch position, the headlamp fail-safe function may be activated.

POSSIBLE CAUSES

- Malfunction of the column switch
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. ECU check by using the SWS monitor.

Check that the power supply and earth lines to the column switch (column-ECU) and the SWS communication lines are normal.

- Ignition switch: OFF

ECU TO BE CHECKED

- COLUMN ECU

OK:"OK" is displayed on the "COLUMN ECU" menu.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to Inspection Procedure A-2 "Communication with column switch (column-ECU) is not possible P.54C-37."

Step 2. Retest the system.

Check that the headlamps illuminate normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the column switch.

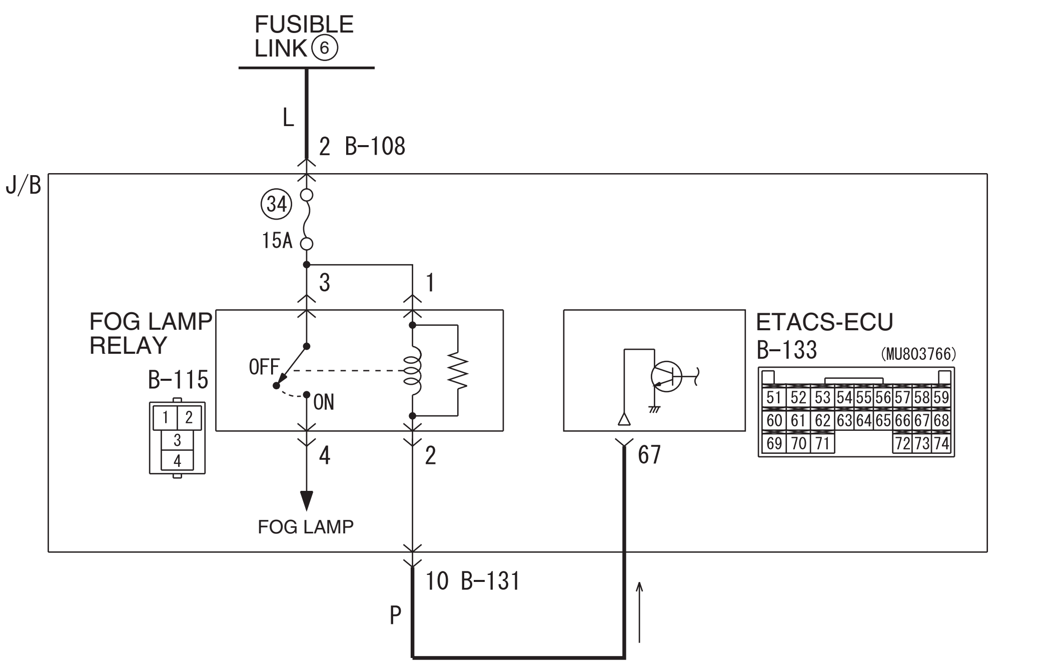
Main Index
Group TOC

FOG LAMP

INSPECTION PROCEDURE K-1: The fog lamps do not illuminate normally.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Fog Lamp Relay Circuit



COMMENTS ON TROUBLE SYMPTOM

If the fog lamps do not illuminate normally, the input signal circuit(s) below or the ETACS-ECU may be defective.

- Tail lamp switch
- Headlamp switch
- Fog lamp switch

POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the fog lamp switch
- Malfunction of the front-ECU
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check that the tail/stop lamps and headlamps operate.

Check that the tail/stop lamps and headlamps illuminate normally.

Q: Is the check result normal?

YES : Go to Step 2.
NO : Repair the tail/stop lamp(s) and headlamp(s). Refer to trouble symptom chart P.54C-29.

Main Index
Group TOC

Step 2. ECU check by using the SWS monitor

Check that the power supply and earth lines to the column switch (column-ECU) and the ETACS-ECU the SWS communication lines are normal.

- Ignition switch: OFF

ECU TO BE CHECKED

- COLUMN ECU
- ETACS ECU

OK: "OK" are displayed for all the items

Q: Is the check result normal?

"OK" are displayed for all the items : Go to Step 3.

"NG" is displayed on the "COLUMN ECU" menu. : Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-37."

"NG" is displayed on the "ETACS ECU" menu. : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Step 3. Function diagnosis by using the SWS monitor

Check the SWS communication signal, which are related to the fog lamps.

<Selected item> LIGHTING - F.FOG LAMP

- Ignition switch: ON
- Lighting switch: "TAIL" or "HEAD"

Item No.	Item name	Normal condition
Item 00	HEADLAMP SW	ON when the lighting switch is at HEAD
Item 01	TAIL LAMP SW	ON when the lighting switch is at TAIL
Item 30	IG SW(IG1)	ON

OK: Normal conditions are displayed for all the items.

Q: Is the check result normal?

Normal conditions are displayed for all the items. : Go to Step 4.

Normal condition is not displayed for item 00 or 01. : Refer to inspection procedure N-4 "Column switch (lighting and turn-signal lamp switch) signal is not received P.54C-208."

Normal condition is not displayed for item No.30. : Refer to inspection procedure N-2 "The ignition switch (IG1) signal is not received P.54C-203."

Step 4. ETACS switch data by using the SWS monitor

Check the ETACS-ECU signals which are related to the fog lamps.

- Fog lamp switch: ON

Item No.	Item name	Normal condition
Item 10	F.FOG LAMP SW	ON

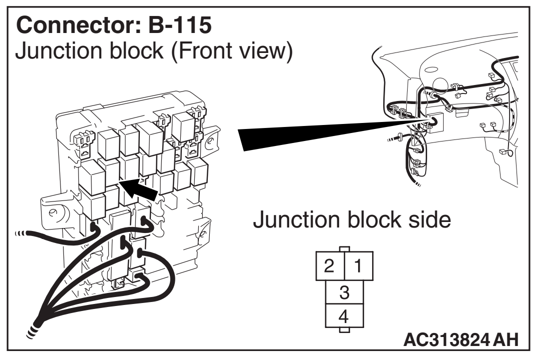
OK: Normal condition is displayed.

Q: Is the check result normal?

YES : Go to Step 5.

NO : Refer to inspection procedure N-13 "The fog lamp switch signal is not received P.54C-231."

Step 5. Connector check: B-115 fog lamp relay connector



Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair the defective connector.

Step 6. Check the fog lamp relay.

Refer to GROUP 54A – Fog lamp P.54A-79.

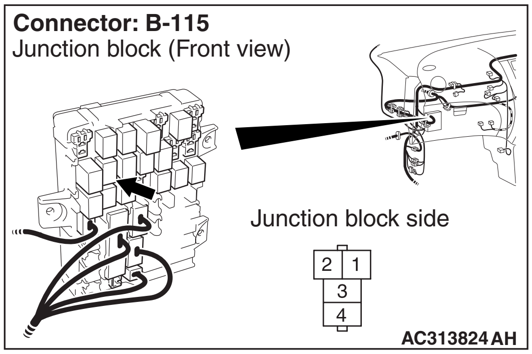
Q: Is the check result normal?

YES : Go to Step 7.

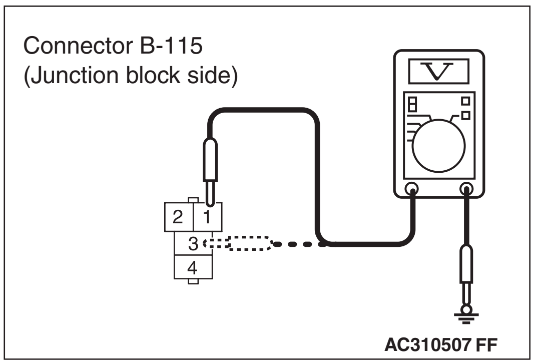
NO : Replace the fog lamp relay.

Main Index
Group TOC

Step 7. Voltage measurement at the B-115 fog lamp relay connector.



(1) Remove the fog lamp relay, and measure at the junction block side.

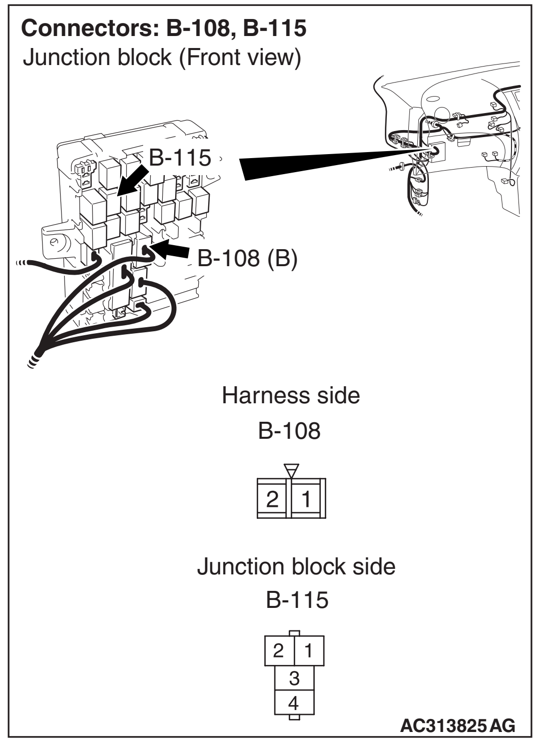


(2) Check the voltage between the fog lamp relay connector and body earth.
- Voltage between B-115 fog lamp relay connector terminal No.1 and body earth
- Voltage between B-115 fog lamp relay connector terminal No.3 and body earth

OK: System voltage

Q: Is the check result normal?
YES : Go to Step 9.
NO : Go to Step 8.

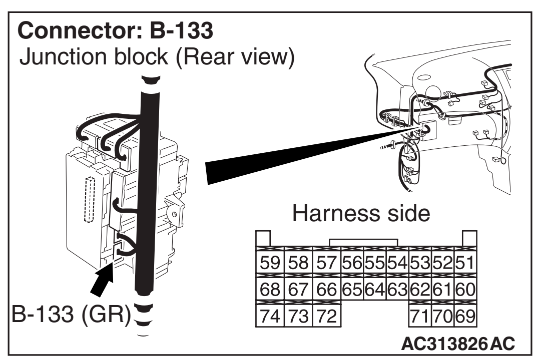
Step 8. Check the wiring harness between B-115 fog lamp relay connector terminals Nos.1 and 3 to the fusible link (6).



NOTE: Prior to the wiring harness inspection, check junction block connector B-108, and repair if necessary.
- Check the power supply line for open circuit.

Q: Is the check result normal?
YES : Go to Step 11.
NO : Repair the wiring harness.

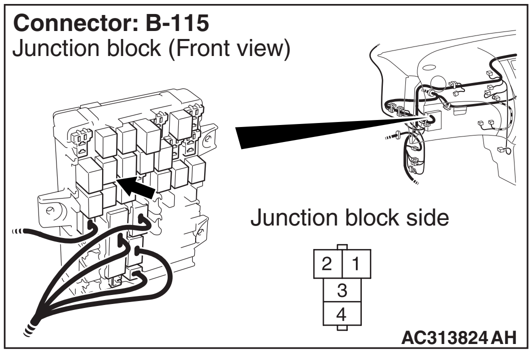
Step 9. Connector check: B-133 ETACS-ECU connector

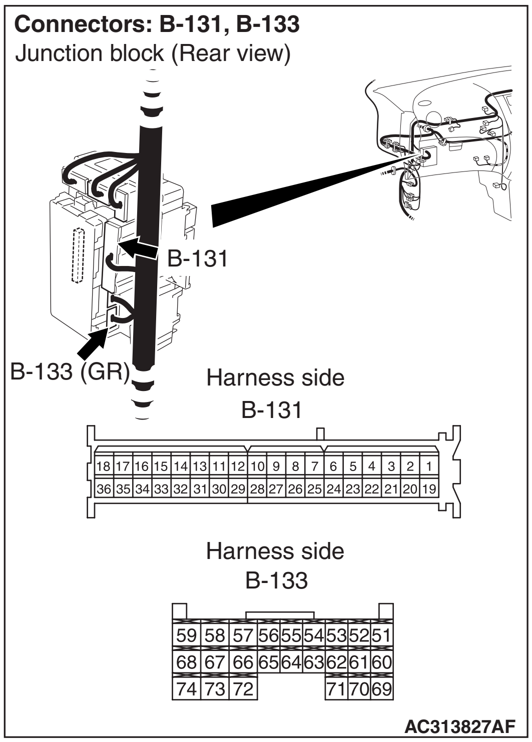


Q: Is the check result normal?
YES : Go to Step 10.
NO : Repair the defective connector.

Main Index
Group TOC

Step 10. Check the wiring harness between B-115 fog lamp relay connector terminal No.2 to B-133 ETACS-ECU connector terminal No.67.





NOTE: Prior to the wiring harness inspection, check junction block connector B-131, and repair if necessary.

- Check the output lines for open circuit.

Q: Is the check result normal?

YES : Go to Step 11.

NO : Repair the wiring harness.

Step 11. Retest the system.

Check that the fog lamps illuminate normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

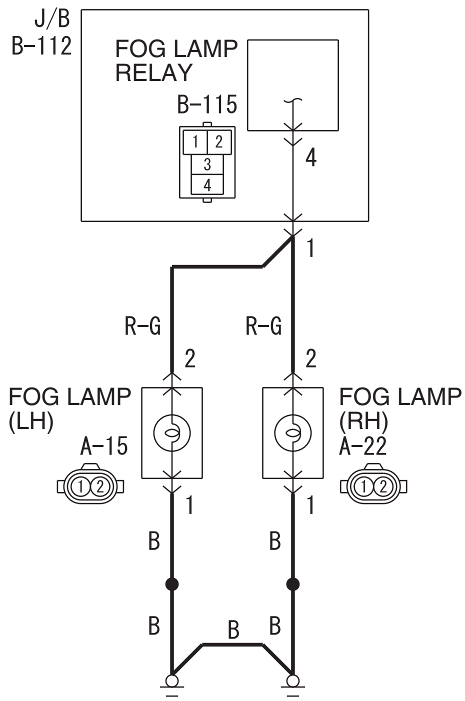
Main Index
Group TOC

INSPECTION PROCEDURE K-2: Any of the fog lamps does not illuminate.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Fog Lamps Circuit



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Grey R : Red P : Pink V : Violet PU : Purple

W6N54L007A

COMMENTS ON TROUBLE SYMPTOM

If any of the fog lamps do not illuminate, the wiring harness connector(s), the bulb or the fuse may be defective or burned out.

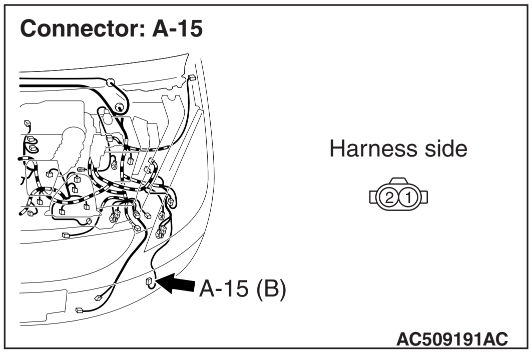
POSSIBLE CAUSES

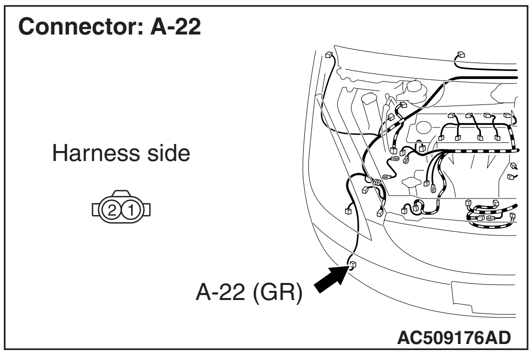
- Burned-out fog lamp bulb
- Damaged harness wires and connectors

Main Index
Group TOC

DIAGNOSIS PROCEDURE

Step 1. Connector check: A-22 fog lamp (RH) connector or A-15 fog lamp (LH) connector





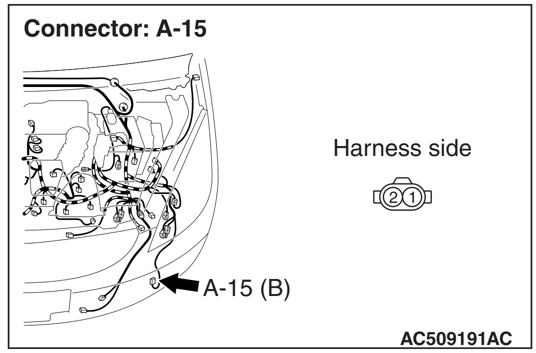
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

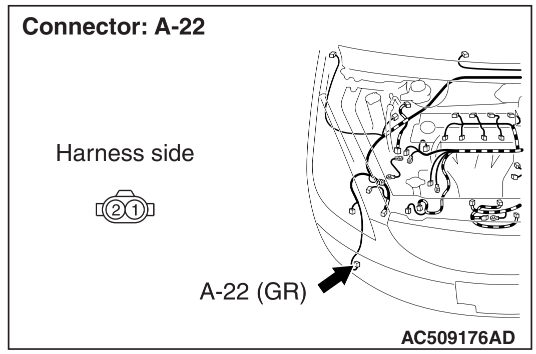
Step 2. Check the bulbs of the fog lamps lamp.

Check the bulb(s) of the defective lamp.

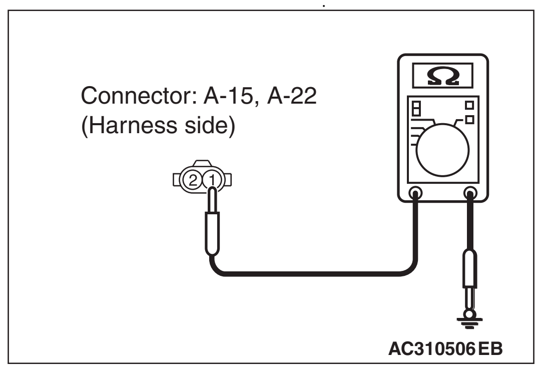
Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the bulb(s) of the defective lamp.

Step 3. Resistance measurement at the A-22 fog lamp (RH) connector or A-15 fog lamp (LH) connector.





(1) Disconnect the connector, and measure at the wiring harness side.
(2) Check the resistance between the lamp connector and body earth.



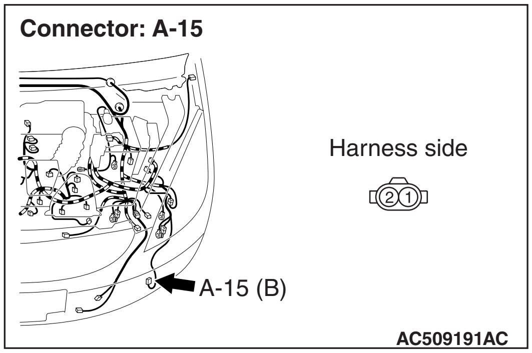
Resistance between A-22 fog lamp (RH) connector terminal No.1 and body earth
- Resistance between A-15 fog lamp (LH) connector terminal No.1 and body earth

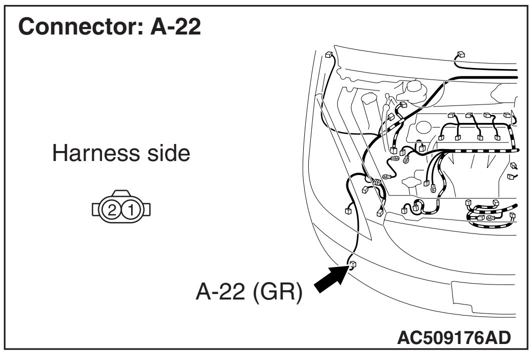
OK: Continuity exists (2 Ω or less)

Q: Is the check result normal?
YES : Go to Step 5.
NO : Go to Step 4.

Main Index
Group TOC

Step 4. Check the wiring harness from A-22 fog lamp (RH) connector or A-15 fog lamp (LH) connector terminal No.1 to body earth.

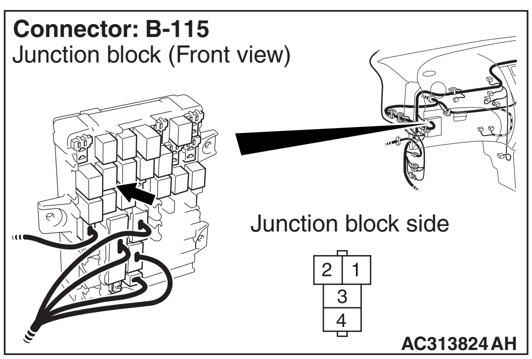




- Check the earth wires for open circuit.

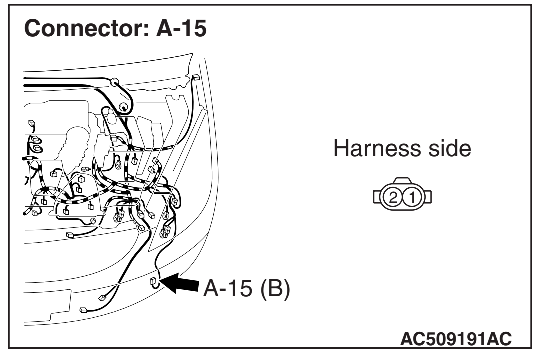
Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

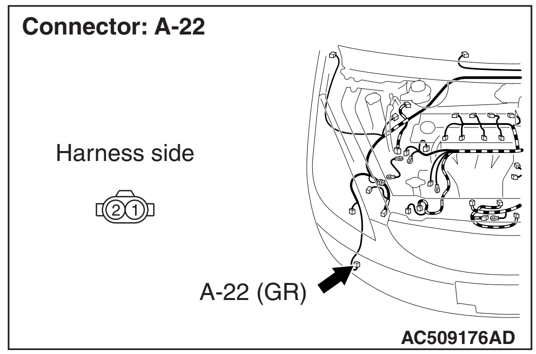
Step 5. Connector check: Connector check: B-115 fog lamp relay connector

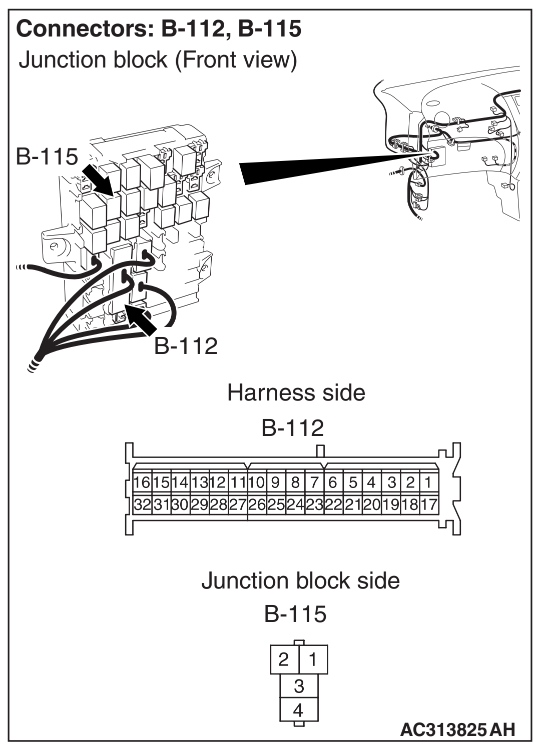


Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

Step 6. Check the wiring harness from A-22 fog lamp (RH) connector or A-15 fog lamp (LH) connector terminal No.2 to B-115 fog lamp relay connector terminal No.4.







NOTE: Prior to the wiring harness inspection, check junction block connector B-112, and repair if necessary.

- Check the power supply line for open circuit.

Main Index
Group TOC

Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the wiring harness.

Step 7. Retest the system.

Check that the fog lamp illuminate normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

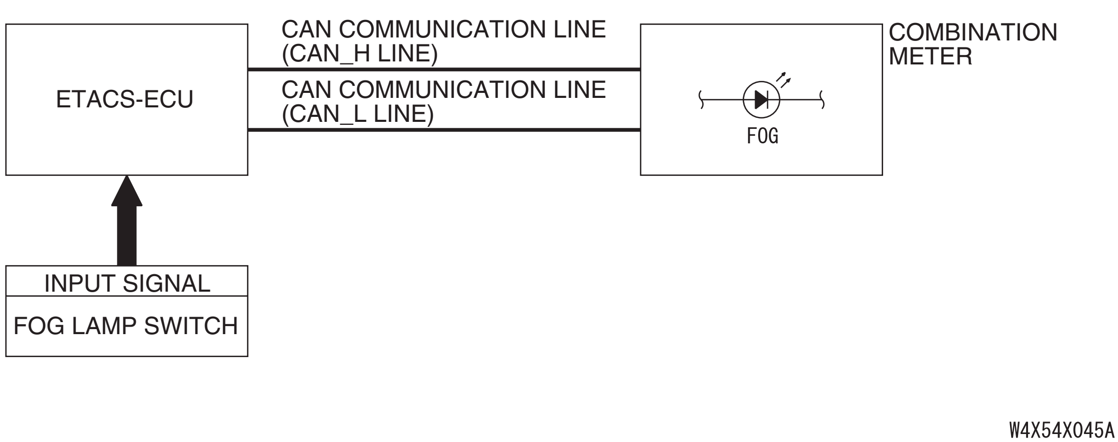
NO : Replace the fog lamp(s).

INSPECTION PROCEDURE K-3: The fog lamp indicator does not illuminate normally.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Fog Lamp Indicator Lamp Circuit



COMMENTS ON TROUBLE SYMPTOM

If the fog lamp indicator does not illuminate normally, connector(s), wiring harness in the CAN bus lines, the ETACS-ECU or the combination meter may be defective.

POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Malfunction of the combination meter
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the fog lamps.

When the fog lamp switch is operated, check that the fog lamps illuminate/go off normally.

Q: Is the check result normal?

YES : Go to Step2.

NO : Refer to Inspection Procedure K-2 "Any of the fog lamps does not illuminate P.54C-165."

Step 2. M.U.T.-III CAN bus diagnostics

Use the M.U.T.-III to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step3.

NO : Repair the CAN bus line (Refer to GROUP 54D, Diagnosis P.54D-13).

Main Index
Group TOC

Step 3. M.U.T.-III other system diagnosis code

Check whether the combination meter-related diagnosis code is set.

Q: Is the diagnosis code set?

YES : Diagnose the combination meter (Refer to GROUP 54A – Troubleshooting P.54A-31).
NO : Go to Step4.

Step 4. ECU check by using the SWS monitor

Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

ECU TO BE CHECKED

- ETACS ECU

OK: "OK" is displayed on the "ETACS ECU" menu.

Q: Is the check result normal?

YES : Go to Step 5.
NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Step 5. M.U.T.-III actuator test

Perform the actuator test for the combination meter, and check that the fog lamp indicator illuminates (Refer to GROUP 54A – Combination Meter P.54A-62).

Q: Is the check result normal?

YES : Replace the ETACS-ECU.
NO : Replace the combination meter.

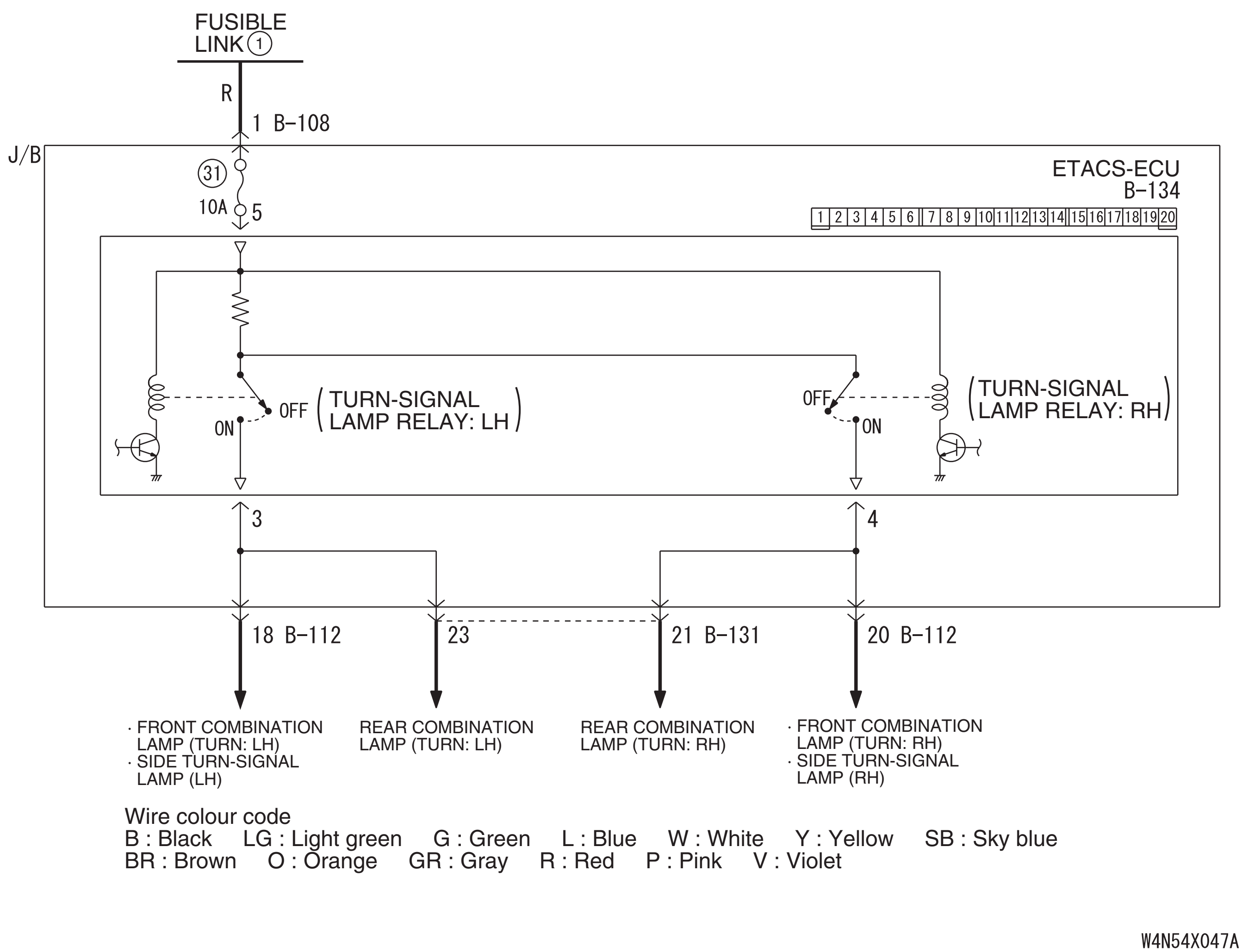
Main Index
Group TOC

FLASHER TIMER

INSPECTION PROCEDURE L-1: The turn-signal lamps do not illuminate.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Turn-Signal Lamp Power Supply Circuit



COMMENTS ON TROUBLE SYMPTOM

If all the turn-signal lamps do not illuminate, the ignition switch (IG1), the turn-signal lamp switch input circuit or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check that the hazard warning lamps operate.

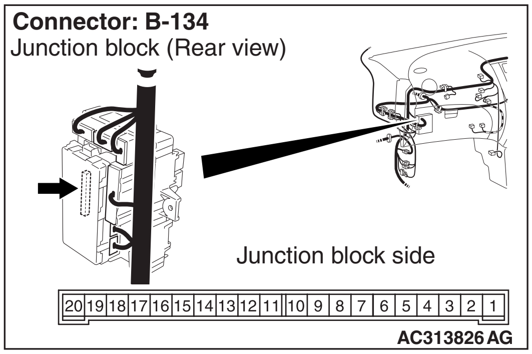
Check that the hazard warning lamps illuminate normally.

Q: Is the check result normal?

YES : Go to Step 6.
NO : Go to Step 2.

Main Index
Group TOC

Step 2. Connector check: B-134 ETACS-ECU connector.

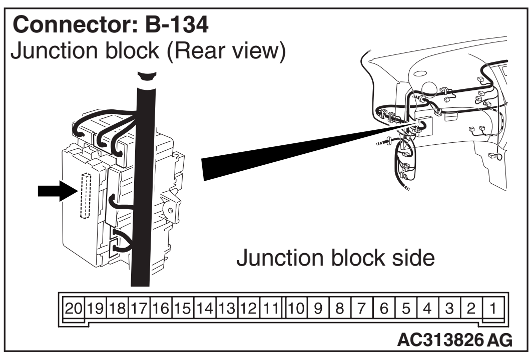


Q: Is the check result normal?

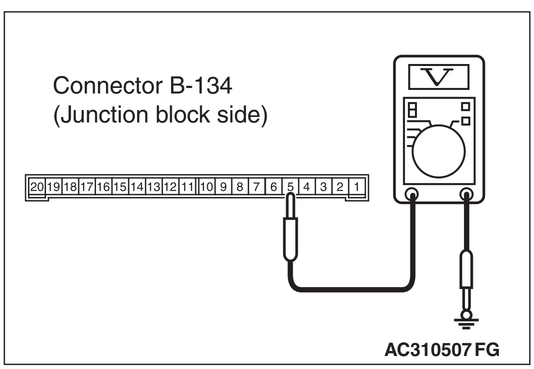
YES : Go to Step 3.

NO : Repair the defective connector.

Step 3. Voltage measurement at the B-134 ETACS-ECU connector.



(1) Remove the ETACS-ECU, and measure at the junction block side.



(2) Voltage between B-134 ETACS-ECU connector terminal No.5 and body earth

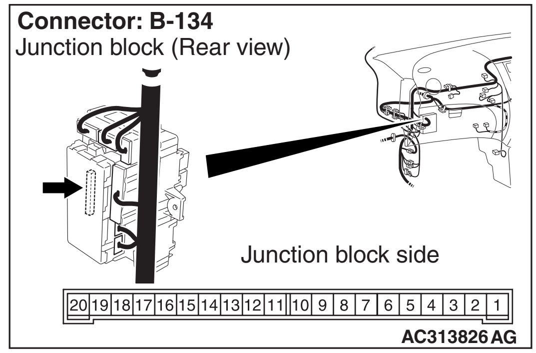
OK: System voltage

Q: Is the check result normal?

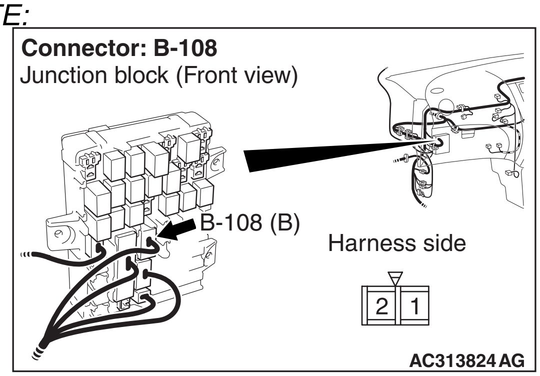
YES : . Go to Step 7.

NO : . Go to Step 4.

Step 4. Check the wiring harness between B-134 ETACS-ECU connector terminal No.5 to the fusible link (1).



NOTE:



Prior to the wiring harness inspection, check junction block connector B-108, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the wiring harness.

Main Index
Group TOC

Step 5. Function diagnosis by using the SWS monitor

Check the SWS communication signal, which are related to the right turn-signal lamps.

<Selected item> TURN SIGNAL - TURN-SIG. RH

- Turn-signal lamp switch: RH
- Ignition switch: ON

Item No.	Item name	Normal condition
Item 10	TURN SIG.RH	ON
Item 11	TURN SIG.LH	OFF
Item 30	IG SW(IG1)	ON

OK:Normal conditions are displayed for all the items.

Q: Are the check result normal?

Normal conditions are displayed for all the items. : Go to Step 6.

Normal condition is not displayed for item 10 or 11. : Refer to inspection procedure N-4 "Column switch (lighting and turn-signal lamp switch) signal is not received P.54C-208."

Normal condition is not displayed for item No.30. : Refer to inspection procedure N-2 "The ignition switch (IG1) signal is not received P.54C-203."

Step 6. Function diagnosis by using the SWS monitor

Check the SWS communication signal, which are related to the left turn-signal lamps.

<Selected item> TURN SIGNAL - TURN-SIG. LH

- Turn-signal lamp switch: LH
- Ignition switch: ON

Item No.	Item name	Normal condition
Item 10	TURN SIG.RH	OFF
Item 11	TURN SIG.LH	ON
Item 30	IG SW (IG1)	ON

OK: Normal conditions are displayed for all the items.

Q: Are the check result normal?

Normal conditions are displayed for all the items. : Go to Step 7.

Normal condition is not displayed for item 10 or 11. : Refer to inspection procedure N-4 "Column switch (lighting and turn-signal lamp switch) signal is not received P.54C-208."

Normal condition is not displayed for item No.30. : Refer to inspection procedure N-2 "The ignition switch (IG1) signal is not received P.54C-203."

Step 7. Retest the system.

Check that the turn-signal lamps illuminate.

Q: Is the check result normal?

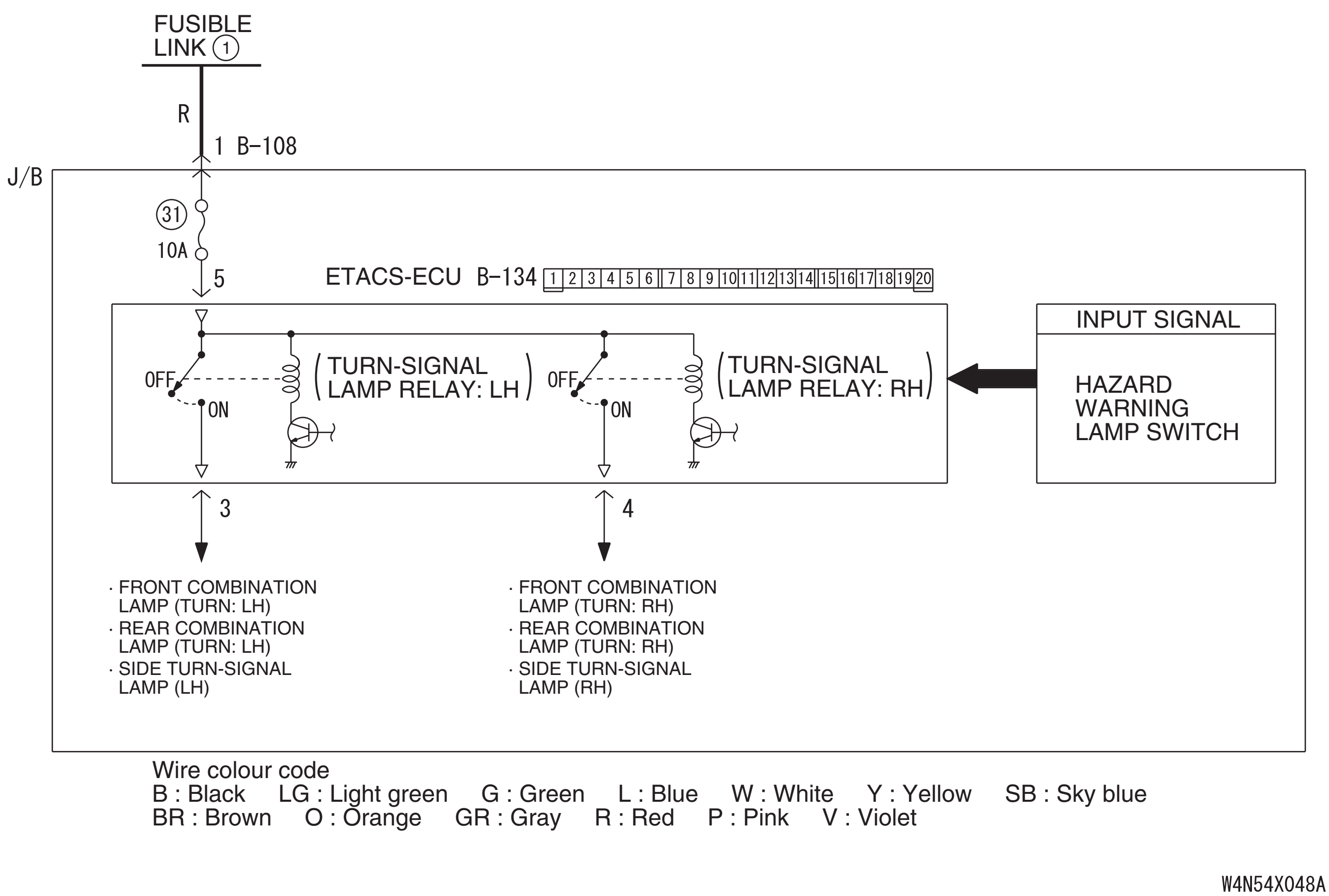
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE L-2: The hazard warning lamps do not illuminate.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Hazard Warning Lamp Circuit



COMMENTS ON TROUBLE SYMPTOM

If the hazard warning lamps do not illuminate, the hazard warning lamp input signal circuit or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the hazard warning lamp switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check that the turn-signal lamps operate.
Check that the turn-signal lamps illuminate normally.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to inspection procedure L-1 "The turn-signal lamps do not illuminate P.54C-170."

Main Index
Group TOC

Step 2. ETACS switch data by using the SWS monitor

Check the ETACS-ECU signals which are related to the hazard warning lamp.

- Hazard warning lamp switch: ON

Item No.	Item name	Normal condition
Item 04	HAZARD LMP SW	ON (only when switch is operated)

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Refer to inspection procedure N-9 "The hazard warning lamp switch signal is not received P.54C-219."

Step 3. Retest the system.

Check that the hazard warning lamps illuminate.

Q: Is the check result normal?

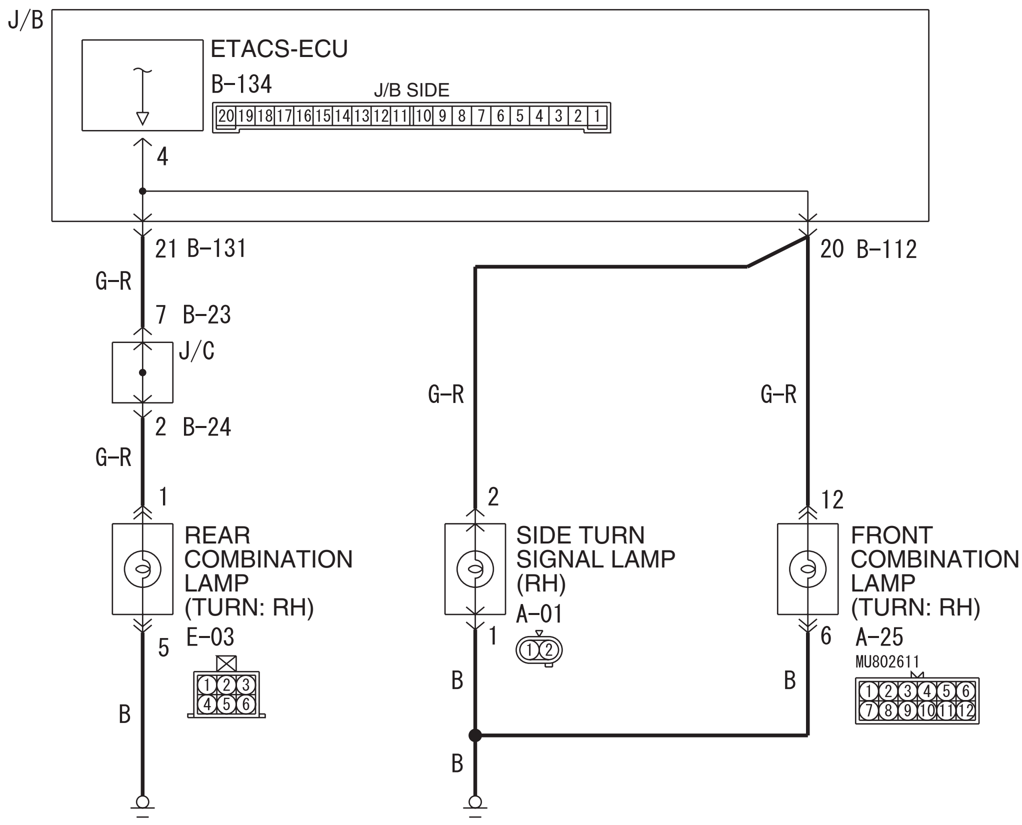
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE L-3: Any of the turn-signal lamps does not illuminate.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Turn-Signal Lamps Circuit (RH)

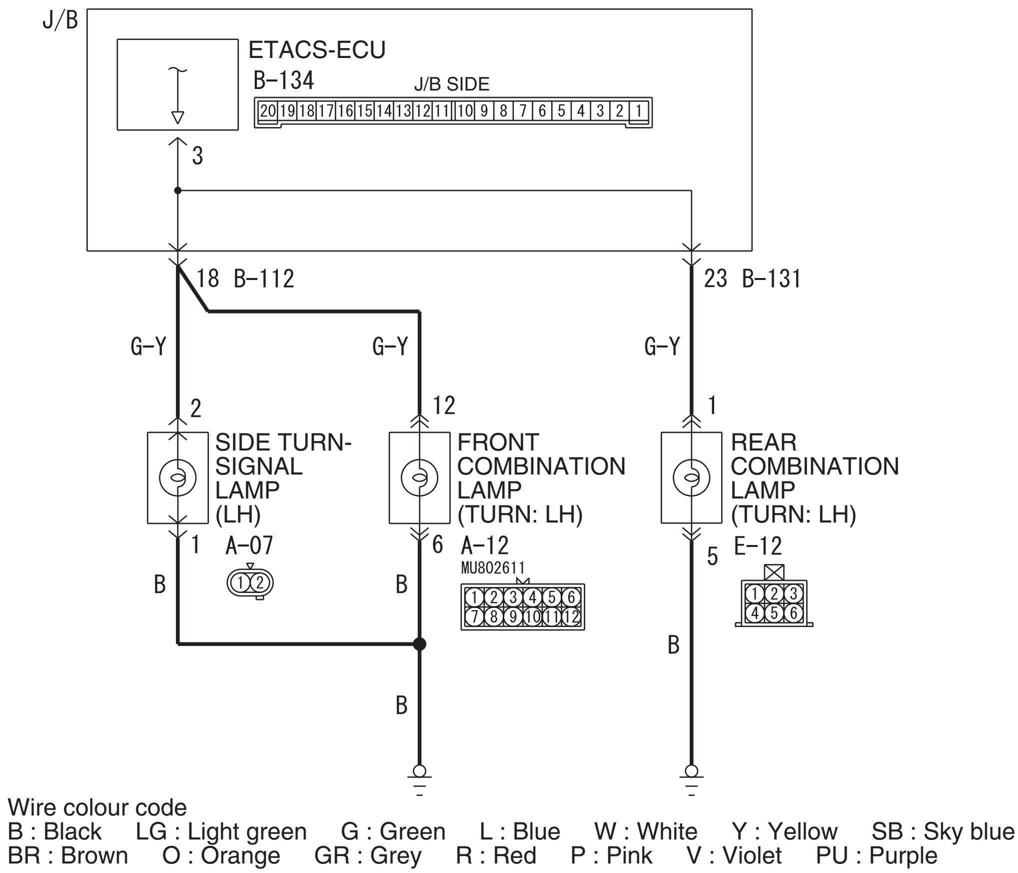


Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Grey R : Red P : Pink V : Violet PU : Purple

W6N54L008A

Main Index
Group TOC

Turn-Signal Lamps Circuit (LH)



W6N54L009A

COMMENTS ON TROUBLE SYMPTOM

If any of the turn-signal lamp does not illuminate normally, wiring harness connector(s) or the bulb may be defective.

POSSIBLE CAUSES

- Defective front turn-signal lamp bulb
- Defective head lamp assembly
- Defective side turn-signal lamp
- Defective rear turn-signal lamp bulb
- Damaged harness wires and connectors

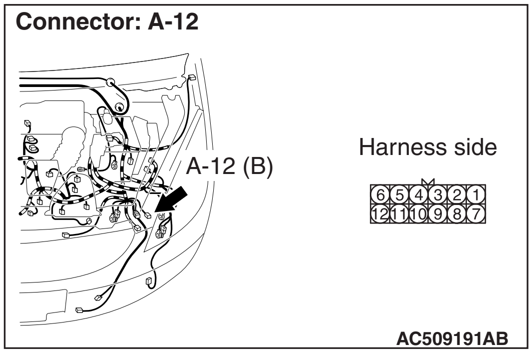
DIAGNOSIS PROCEDURE

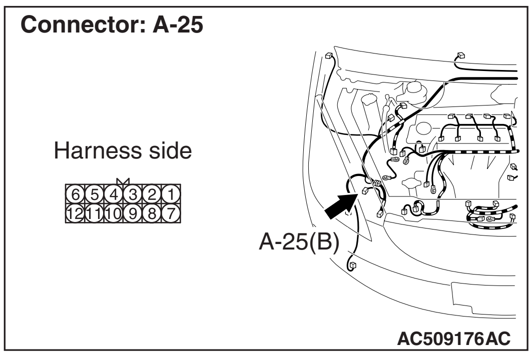
Step 1. Confirm which turn-signal lamp is defective.

Q: Which turn-signal lamp fails to illuminate correctly?

Front turn-signal lamp : Go to Step 2.
Side turn-signal lamp : Go to Step 8.
Rear turn-signal lamp : Go to Step 14.

Step 2. Connector check: A-25 <front combination lamp (turn: RH)> or A-12 <front combination lamp (turn: LH)> connector





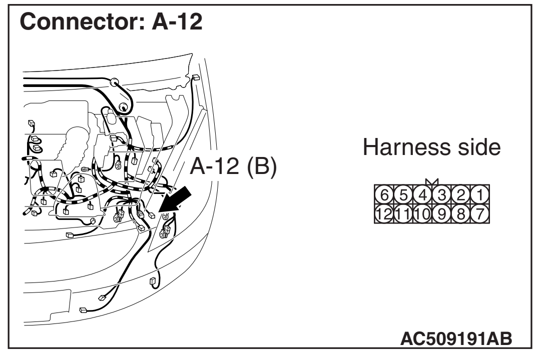
Q: Are the check results normal?
YES : Go to Step 3.
NO : Repair the defective connector.

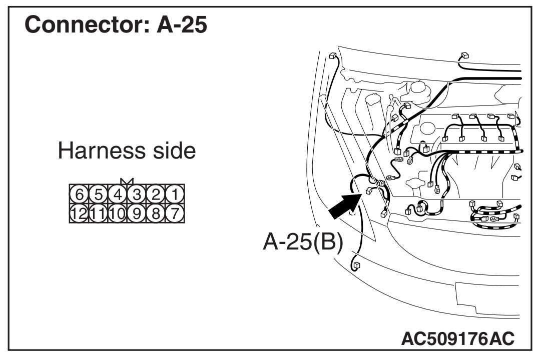
Step 3. Check the bulb(s) of the turn-signal lamps.

Check the bulb(s) of the defective lamp.

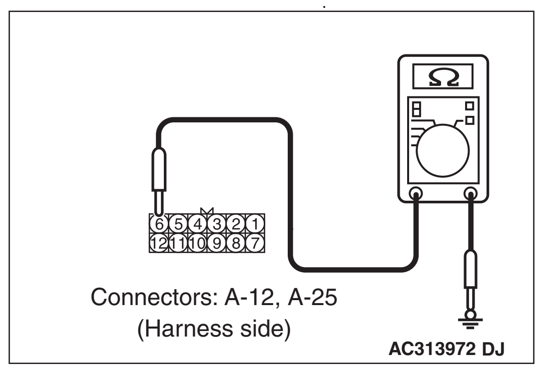
Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the bulb(s) of the defective lamp.

Step 4. Resistance measurement at A-25 <front combination lamp (turn: RH)> or A-12 <front combination lamp (turn: LH)> connector





(1) Disconnect the connector, and measure at the wiring harness side.
(2) Measure the resistance between the defective lamp connector terminal and body earth.

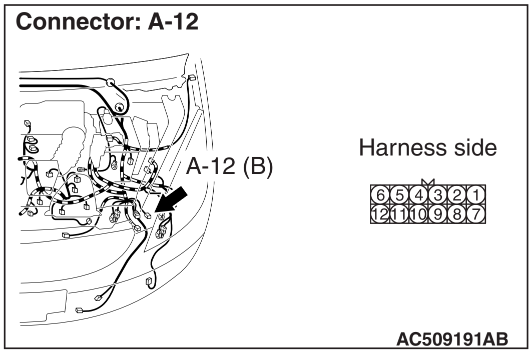


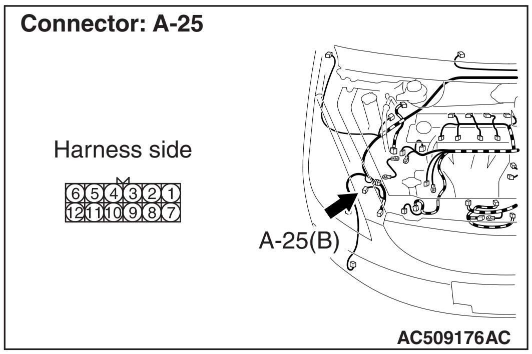
Resistance between A-25 <front combination lamp (turn: RH)> connector or A-12 <front combination lamp (turn: LH)> connector terminal No.6 and body earth

OK: Continuity exists (2 Ω or less)

Q: Is the check result normal?
YES : Go to Step 6.
NO : Go to Step 5.

Step 5. Check the wiring harness from A-25 <front combination lamp (turn: RH)> or A-12 <front combination lamp (turn: LH)> connector terminal No.6 and body earth.



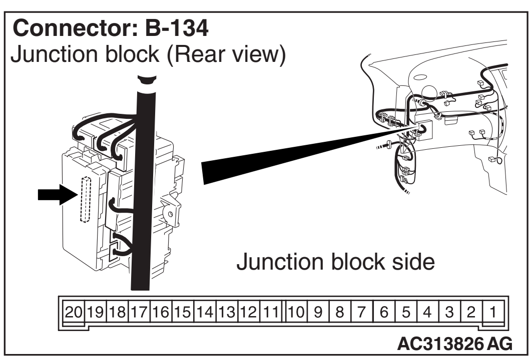


- Check the earth wires for open circuit.

Q: Is the check result normal?

YES : Go to Step 6.
NO : Repair the wiring harness.

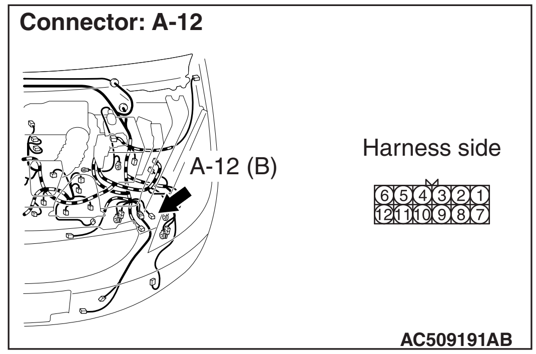
Step 6. Connector check: B-134 ETACS-ECU connector

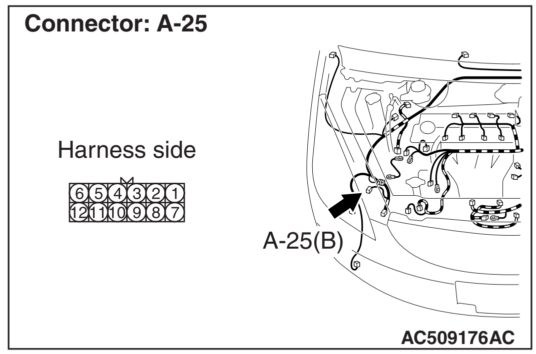


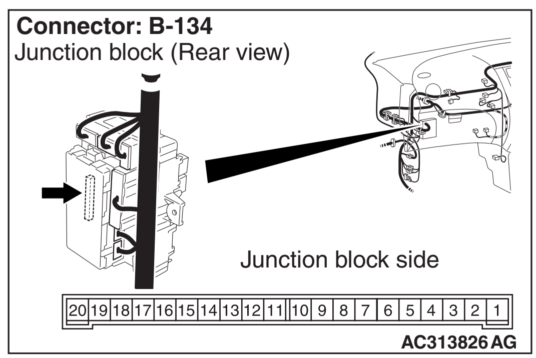
Q: Is the check result normal?

YES : Go to Step 7.
NO : Repair the defective connector.

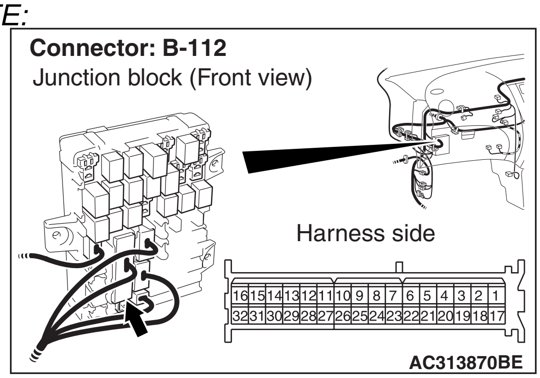
Step 7. Check the wiring harness from A-25 <front combination lamp (turn: RH)> connector or A-12 <front combination lamp (turn: LH)> connector terminal No.12 and B-134 ETACS-ECU connector terminal No.4 (RH) or No.3 (LH).







NOTE:



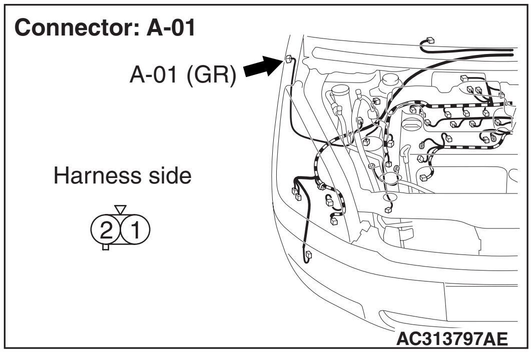
Prior to the wiring harness inspection, check junction block connector B-112, and repair if necessary.

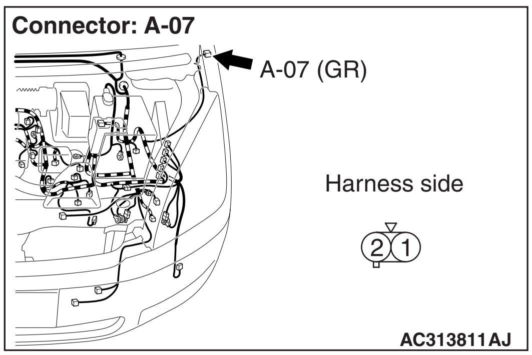
- Check the output lines for open circuit.

Main Index
Group TOC

Q: Is the check result normal?
YES : Go to Step 20.
NO : Repair the wiring harness.

Step 8. Connector check: A-01 <side turn-signal lamp (RH)> or A-07 <side turn-signal lamp (LH)> connector





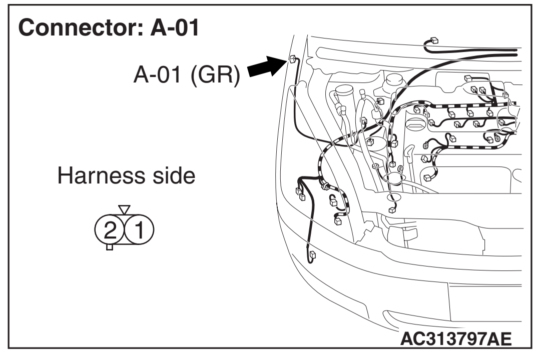
Q: Are the check results normal?
YES : Go to Step 9.
NO : Repair the defective connector.

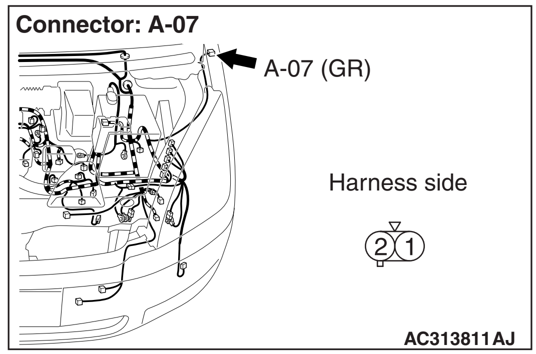
Step 9. Check the bulb(s) of the turn-signal lamps.

Check the bulb(s) of the defective lamp.

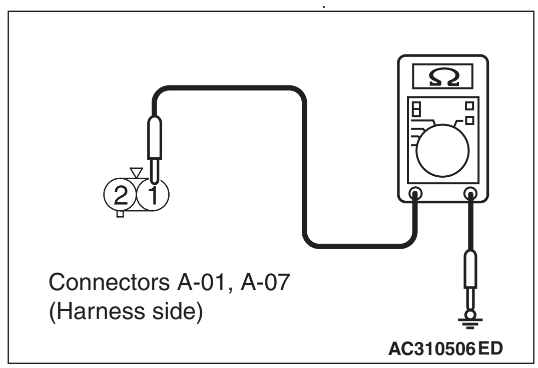
Q: Is the check result normal?
YES : Go to Step 10.
NO : Replace the bulb(s) of the defective lamp.

Step 10. Resistance measurement at A-01 <side turn-signal lamp (RH)> or A-07 <side turn-signal lamp (LH)> connector





(1) Disconnect the connector, and measure at the wiring harness side.
(2) Measure the resistance between the defective lamp connector terminal and body earth.



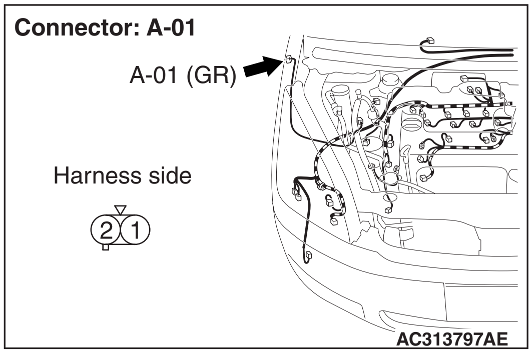
Resistance between A-01 <side turn-signal lamp (RH)> connector or A-07 <side turn-signal lamp (RH)> connector terminal No.1 and body earth

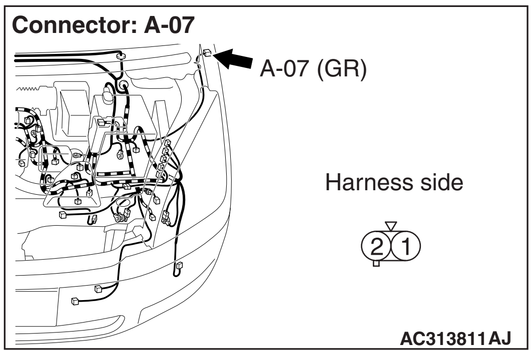
OK: Continuity exists (2 Ω or less)

Q: Is the check result normal?
YES : Go to Step 12.
NO : Go to Step 11.

Main Index
Group TOC

Step 11. Check the wiring harness from A-01 <side turn-signal lamp (RH)> or A-07 <side turn-signal lamp (LH)> connector terminal No.1 and body earth.





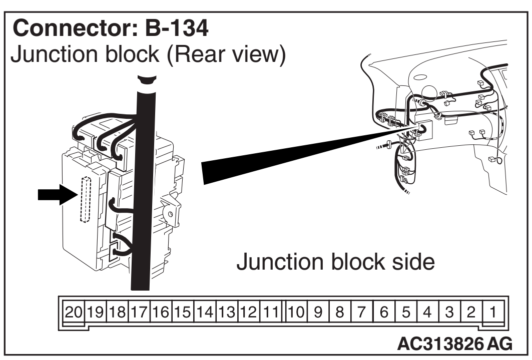
- Check the earth wires for open circuit.

Q: Is the check result normal?

YES : Go to Step 12.

NO : Repair the wiring harness.

Step 12. Connector check: B-134 ETACS-ECU connector

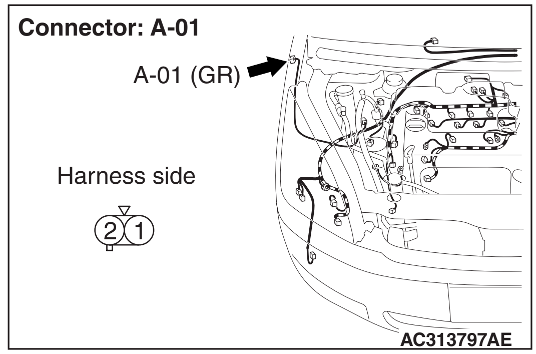


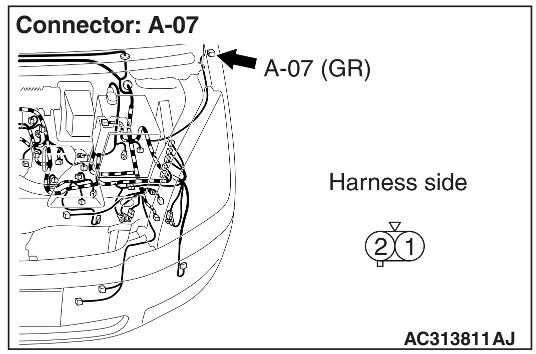
Q: Is the check result normal?

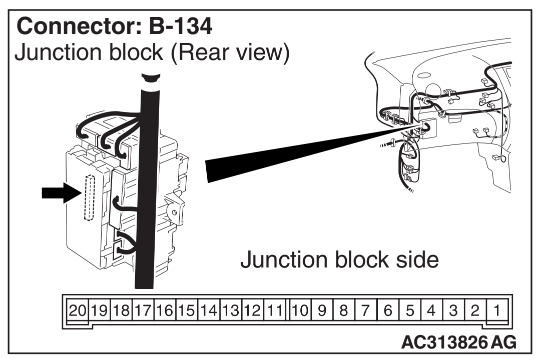
YES : Go to Step 13.

NO : Repair the defective connector.

Step 13. Check the wiring harness from A-01 <side turn-signal lamp (RH)> connector or A-07 <side turn-signal lamp (LH)> connector terminal No.2 and B-134 ETACS-ECU connector terminal No.4 (RH) or No.3 (LH).

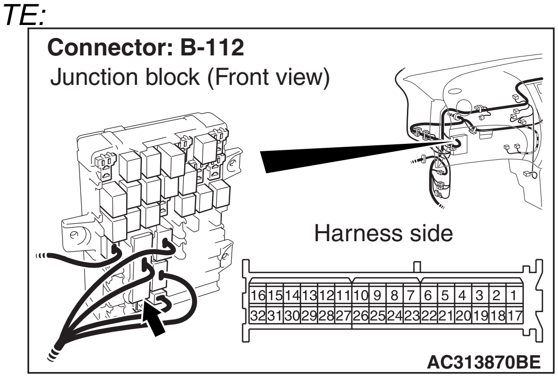






- Check the output lines for open circuit.

NOTE:

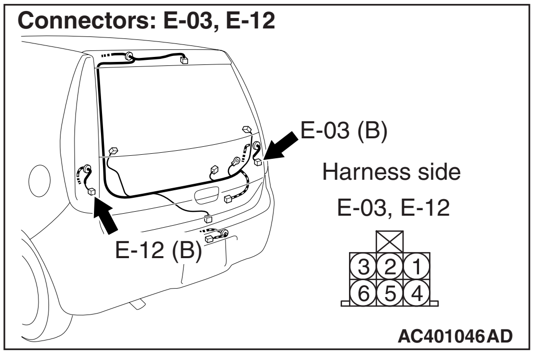


Prior to the wiring harness inspection, check junction block connector B-112, and repair if necessary.

Main Index
Group TOC

Q: Is the check result normal?
YES : Go to Step 20.
NO : Repair the wiring harness.

Step 14. Connector check: E-03 <rear combination lamp (turn: RH)> or E-12 <rear combination lamp (turn: LH)> connector



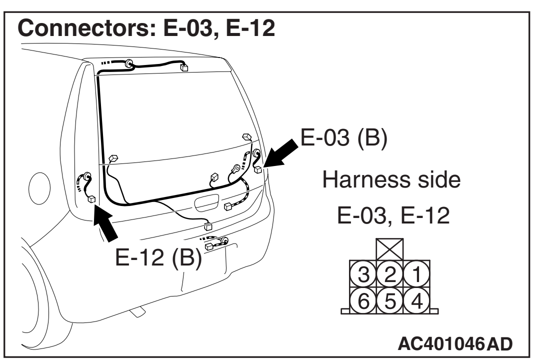
Q: Are the check results normal?
YES : Go to Step 15.
NO : Repair the defective connector.

Step 15. Check the bulb(s) of the turn-signal lamps.

Check the bulb(s) of the defective lamp.

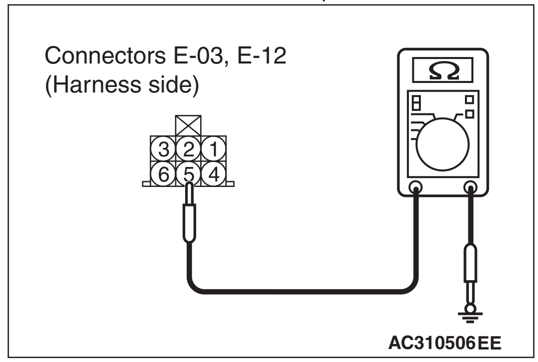
Q: Is the check result normal?
YES : Go to Step 16.
NO : Replace the bulb(s) of the defective lamp.

Step 16. Resistance measurement at E-03 <rear combination lamp (turn: RH)> or E-12 <rear combination lamp (turn: LH)> connector



(1) Disconnect the connector, and measure at the wiring harness side.

(2) Measure the resistance between the defective lamp connector terminal and body earth.

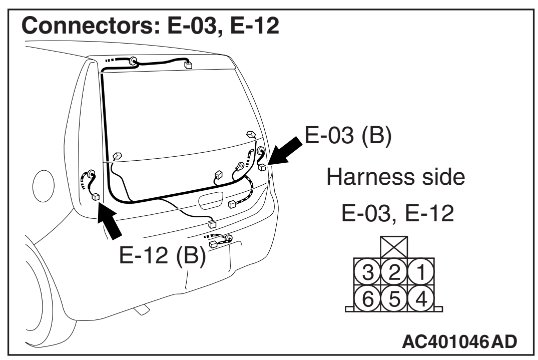


Resistance between E-03 <rear combination lamp (turn: RH)> connector or E-12 <rear combination lamp (turn: LH)> connector terminal No.5 and body earth

OK: Continuity exists (2 Ω or less)

Q: Is the check result normal?
YES : Go to Step 18.
NO : Go to Step 17.

Step 17. Check the wiring harness from E-03 <rear combination lamp (turn: RH)> or E-12 <rear combination lamp (turn: LH)> connector terminal No.5 and body earth.

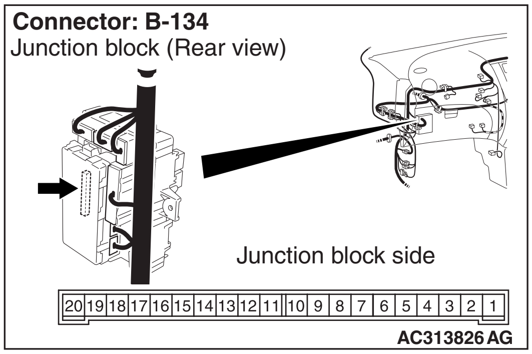


- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : Go to Step 18.
NO : Repair the wiring harness.

Main Index
Group TOC

Step 18. Connector check: B-134 ETACS-ECU connector

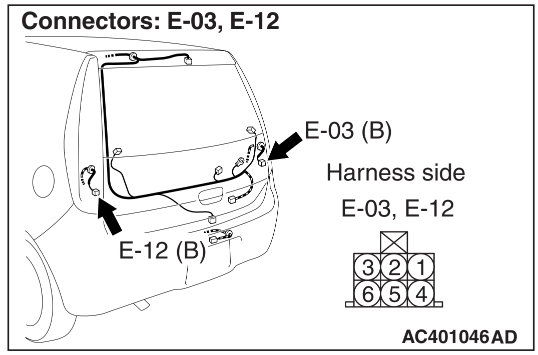


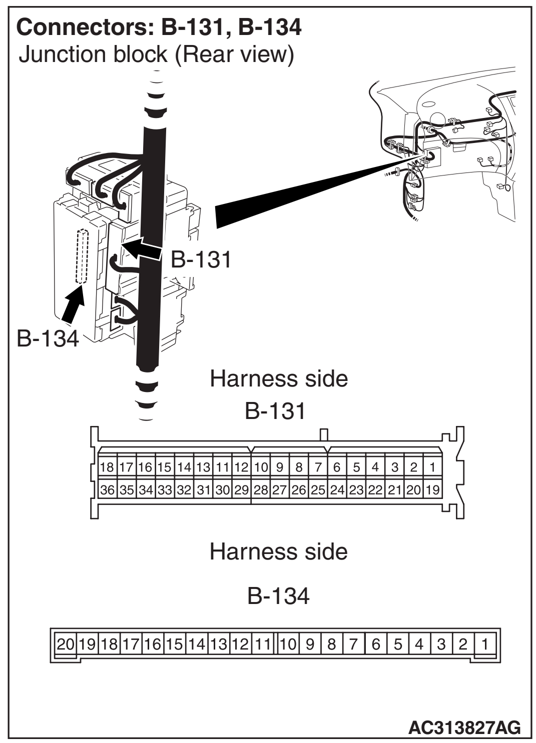
Q: Is the check result normal?

YES : Go to Step 19.

NO : Repair the defective connector.

Step 19. Check the wiring harness from E-03 <rear combination lamp (turn: RH)> connector or E-12 <rear combination lamp (turn: LH)> connector terminal No.1 and B-134 ETACS-ECU connector terminal No.4 (RH) or No.3 (LH).

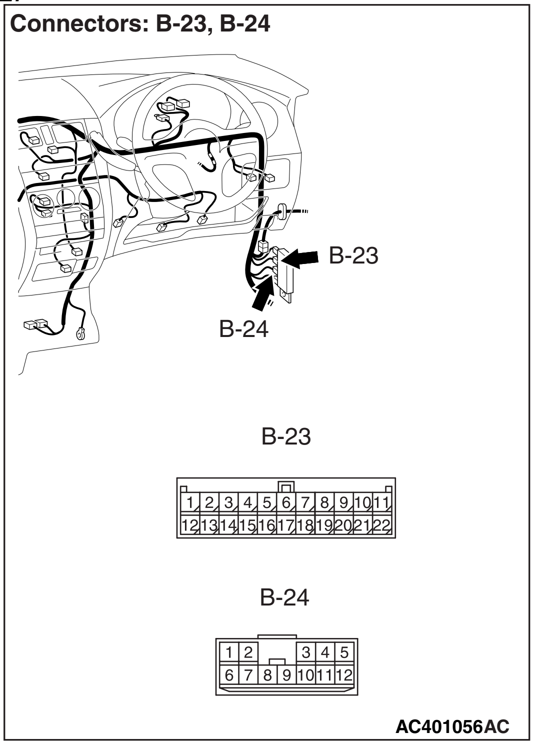




Main Index

Group TOC

NOTE:



Prior to the wiring harness inspection, check junction block connector B-131, and joint connector B-23 (RH), B-24 (RH), and repair if necessary.

- Check the output lines for open circuit.

Q: Is the check result normal?

YES : Go to Step 20.

NO : Repair the wiring harness.

Step 20. Retest the system.

Check that the turn-signal lamps.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

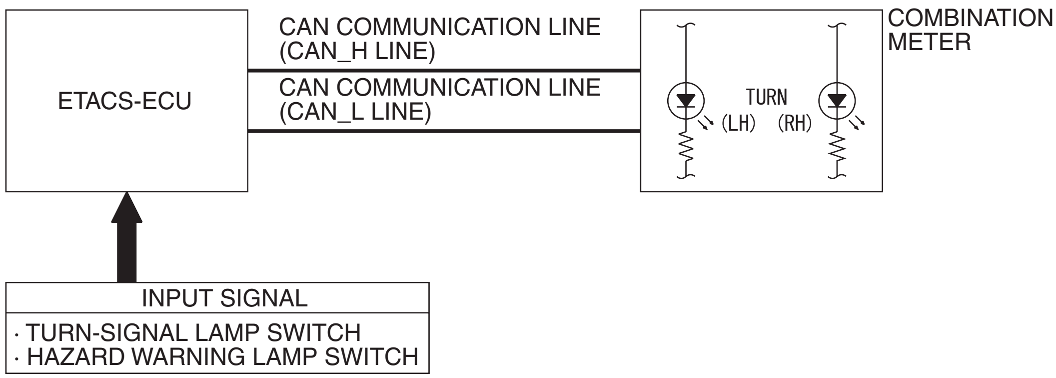
NO : Replace the rear turn-signal lamp assembly.

Main Index
Group TOC

INSPECTION PROCEDURE L-4: The turn-signal indicator lamp does not illuminate.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Turn-Signal Indicator Lamp Circuit



W4X54E190A

COMMENTS ON TROUBLE SYMPTOM

If the turn-signal indicator lamp does not illuminate normally, connector(s), wiring harness in the CAN bus lines, the ETACS-ECU or the combination meter may be defective.

POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Malfunction of the combination meter
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check that the hazard warning lamps operate.

Check that the hazard warning lamps illuminate normally.

Q: Is the check result normal?

YES : Go to Step2.
NO : Refer to Inspection Procedure L-2 "The hazard warning lamps do not illuminate normally P.54C-173."

Step 2. M.U.T.-III CAN bus diagnostics

Use the M.U.T.-III to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step3.
NO : Repair the CAN bus line (Refer to GROUP 54D, Diagnosis P.54D-13).

Step 3. M.U.T.-III other system diagnosis code.

Check whether the combination meter-related diagnosis code is set.

Q: Is the diagnosis code set?

YES : Diagnose the combination meter (Refer to GROUP 54A – Troubleshooting P.54A-31).
NO : Go to Step 4.

Step 4. ECU check by using the SWS monitor

Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

ECU TO BE CHECKED

- ETACS ECU

OK: "OK" is displayed on the "ETACS ECU" menu.

Q: Is the check result normal?

YES : Go to Step 5.
NO : Refer to Inspection Procedure A-3 "Communication with ETACS-ECU is impossible P.54C-41."

Main Index

Group TOC

Step 5. M.U.T.-III actuator test

Perform the actuator test for the combination meter, and check that the turn-signal indicator lamps illuminate (Refer to GROUP 54A – Combination Meter P.54A-62).

Q: Is the check result normal?

YES : Replace the ETACS-ECU.
NO : Replace the combination meter.

INSPECTION PROCEDURE L-5: The turn-signal lamps do not illuminate when the ignition switch is at the ACC position.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

COMMENTS ON TROUBLE SYMPTOM

If the turn-signal lamps do not illuminate with the ignition switch at ACC, the input signal circuit from the ignition switch (ACC) may be defective or the SWS monitor customisation function has set "TURN-SIGNAL" to "IG-ON".

POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Customize function by using the SWS monitor

Use the SWS monitor customisation function to confirm that "TURN-SIGNAL" is set to "IG-ACC."

Q: Is the check result normal?

YES : Go to Step 2.
NO : Use the SWS monitor customisation function to set "TURN-SIGNAL" to "IG-ACC." Refer to P.54C-240.

Step 2. Check that the turn-signal lamps operate.

Check that the turn-signal lamps illuminate normally when the ignition switch is turned to the ON position.

Q: Is the check result normal?

YES : Go to Step 3.
NO : Refer to Inspection Procedure L-1 "The turn-signal lamps do not illuminate normally P.54C-170."

Step 3. SWS monitor data list

Check the ETACS-ECU signals which are related to the turn-signal lamp illumination when the ignition switch is at the ACC position.

<Selected item> ETACS-ECU

- Ignition switch: ACC position

Item No.	Item name	Normal condition
Item 31	IG SW (ACC)	ON

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : Go to Step 4.
NO : Refer to inspection procedure N-1 "The Ignition switch (ACC) signal is not received P.54C-201."

Step 4. Retest the system.

Check whether the turn-signal lights illuminate.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Replace the ETACS-ECU.

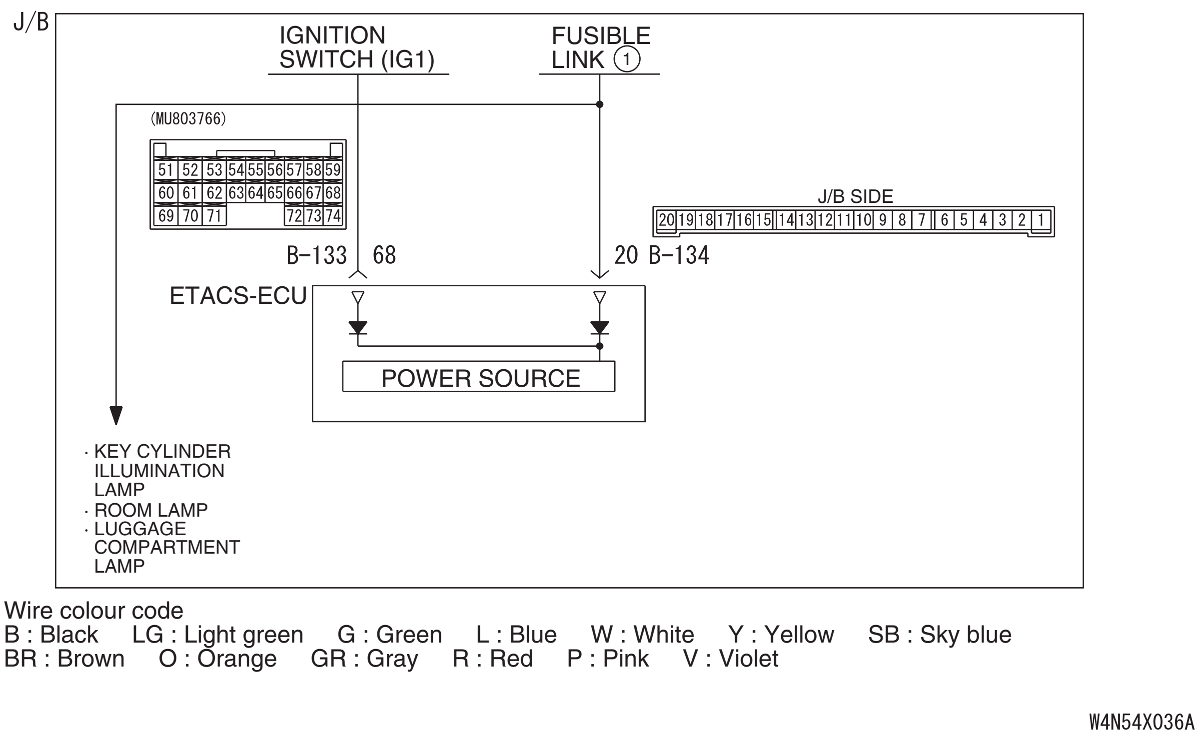
Main Index
Group TOC

INTERIOR LAMP

INSPECTION PROCEDURE M-1: The interior lamps (room ramp, luggage compartment lamp) does not illuminate or extinguish normally.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Interior Lamp Circuit



COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU operates the interior lamps (room lamp, luggage compartment lamp) in accordance with the input signals below.

- Ignition switch (IG1)
- Key reminder switch
- All of the door switches
- Driver's door lock actuator

If this function does not work normally, these input signal circuit(s) or the ETACS-ECU may be defective. Alternatively, it is possible that "RM LMP TN OFF" was set to "W/O FUNCTION" by using the SWS monitor customisation function.

POSSIBLE CAUSES

- Malfunction of the key reminder switch
- Malfunction of the door switches
- Malfunction of the driver's door lock actuator
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Customize function by using the SWS monitor

Use the SWS monitor customisation function to confirm that "RM LMP TN OFF" is set to "7.5s", "15s", "30s" or "60s".

Q: Is the check result normal?

YES : Go to Step 2.

NO : Use the SWS monitor customisation function to set "RM LMP TN OFF" to "7.5s", "15s", "30s" or "60s". Refer to P.54C-240.

Main Index
Group TOC

Step 2. ECU check by using the SWS monitor
Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

ECU TO BE CHECKED

- ETACS ECU

OK: "OK" is displayed on the "ETACS ECU" menu.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Step 3. SWS monitor data list
Check the SWS communication line signals related to the room lamp and the luggage compartment lamp illuminations.

<Selected item> ETACS

- Ignition switch: OFF
- Driver's door: open

Item No.	Item name	Normal condition
Item 30	IG SW(IG1)	OFF
Item 32	DR DOOR SW	ON

OK: Normal conditions are displayed for all the items.

Q: Is the check result normal?
Normal conditions are displayed for all the items. : Go to Step 4.
Normal condition is not displayed for item No.30 : Refer to inspection procedure N-2 "The ignition switch (IG1) signal is not received P.54C-203."
Normal condition is not displayed for item No.32 : Refer to inspection procedure N-3 "The driver's door switch signal is not received P.54C-205."

Step 4. ETACS switch data by using the SWS monitor
Check the ETACS-ECU signals related to the illumination of the room lamp and the luggage compartment lamp.

- Ignition switch: OFF (key inserted)
- Doors other than the driver's door: Closed to open

Item No.	Item name	Normal condition
Item 03	KEY REMIN SW	OFF
Item 40	ALL DOOR SW	from ON to OFF

- Driver's door lock actuator switch: UNLOCK → LOCK

Item No.	Item name	Normal condition
Item 21	DR DOR LCK SW	from OFF to ON
Item 22	DR DOR ULK SW	from ON to OFF

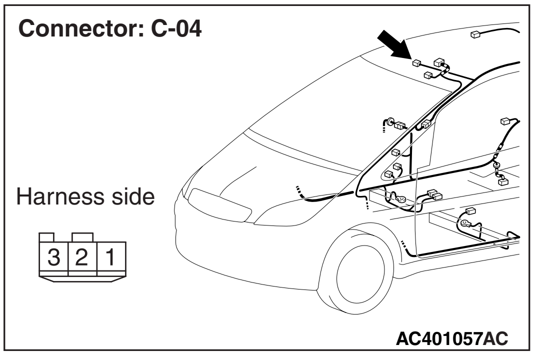
OK: Normal conditions are displayed for all the items.

Q: Is the check result normal?
Normal conditions are displayed for all the items. : Go to Step 5.
Normal condition is not displayed for item No.03 : Refer to inspection procedure N-7 "The key reminder switch signal is not received P.54C-213 ."
Normal condition is not displayed for item No.40 : Refer to inspection procedure N-10 "All the door switch signals are not received P.54C-222."
Normal condition is not displayed for item No.21 or 22 : Refer to inspection procedure N-11 "The driver's door lock actuator switch signal is not received P.54C-226."

Step 5. Check of the troubles
When the room lamp and the luggage compartment lamp switches are set to the DOOR or ON position, the room lamp and the luggage compartment lamp should illuminate normally.

Q: Is the check result normal?
The lamp illuminates at neither the ON nor DOOR position. : Go to Step 6.
The lamp does not illuminate at the DOOR position. : Go to Step 8.
The lamp does not illuminate at the ON position. : Go to Step 10.

Step 6. Connector check: C-04 room lamp connector

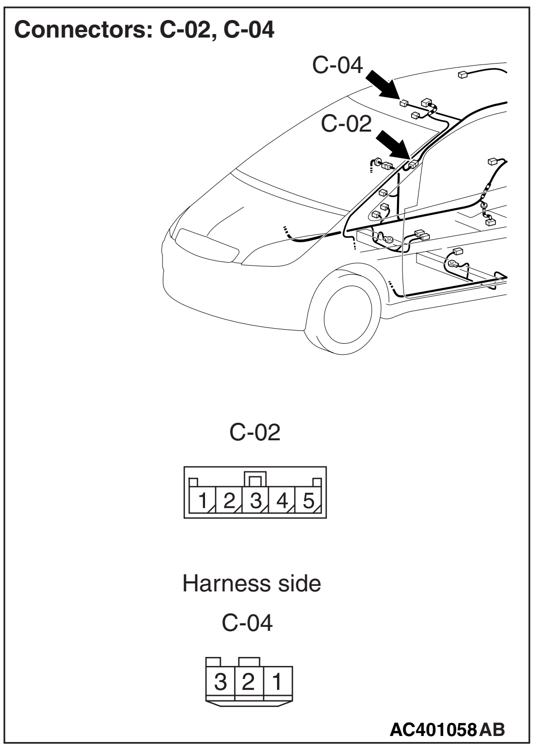


Q: Is the check result normal?

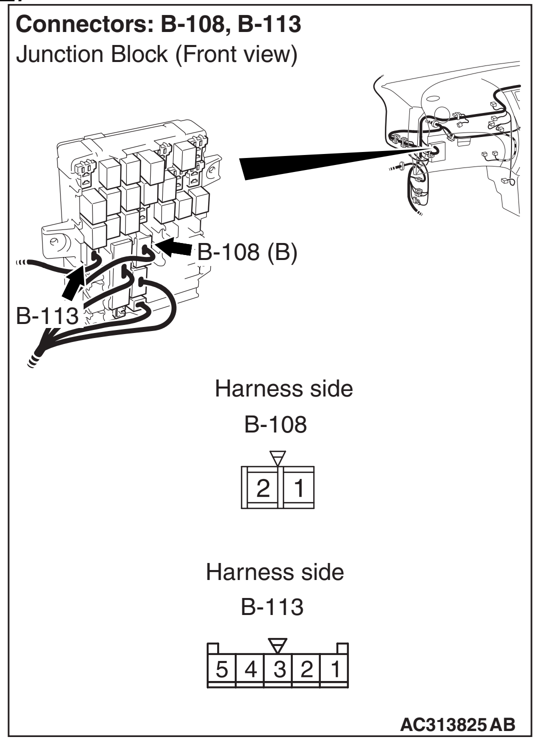
YES : Go to Step 7.

NO : Repair the defective connector.

Step 7. Check the wiring harness from C-04 room lamp connector terminal No.3 to fusible link (1).



NOTE:



Prior to the wiring harness inspection, check intermediate connector C-02 and junction block connector B-108 and B-113 repair if necessary.

- Check the power supply line for open circuit.

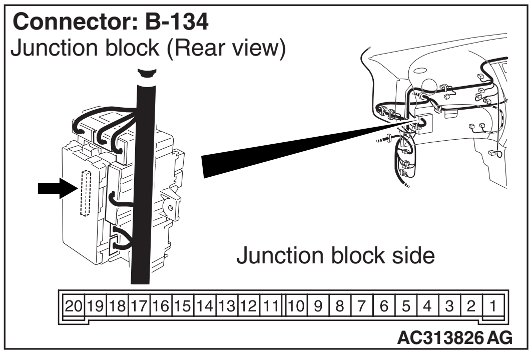
Q: Is the check result normal?

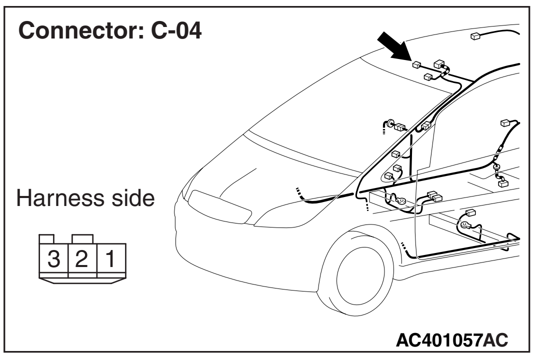
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

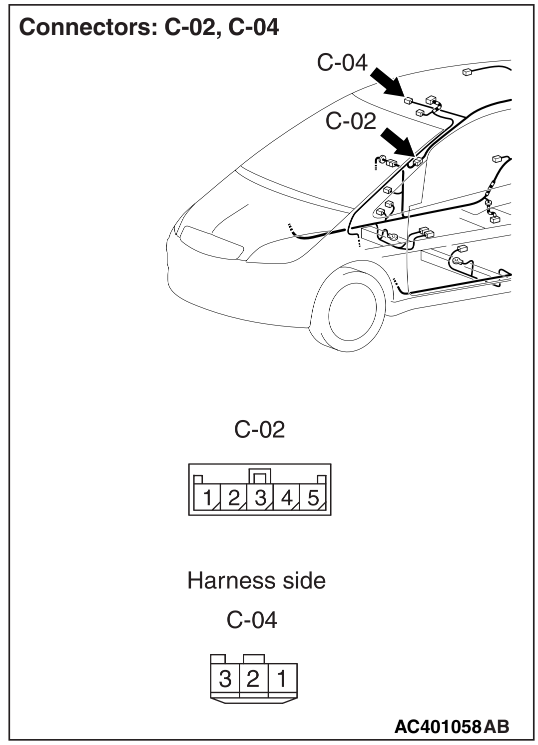
NO : Repair the wiring harness.

Main Index
Group TOC

Step 8. Connector check: B-134 ETACS-ECU connector, C-04 room lamp connector





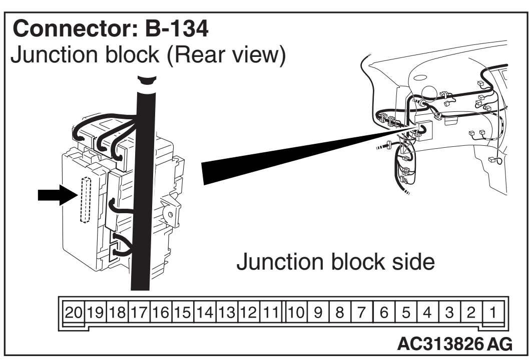


Q: Is the check result normal?

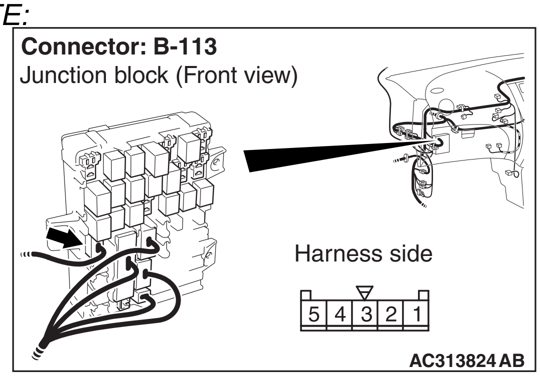
YES : Go to Step 9.

NO : Repair the defective connector.

Step 9. Check the wiring harness from B-134 ETACS-ECU connector terminal No.18 to C-04 room lamp connector terminal No.1



NOTE:



Prior to the wiring harness inspection, check intermediate connector C-02 and junction block connector B-113 repair if necessary.

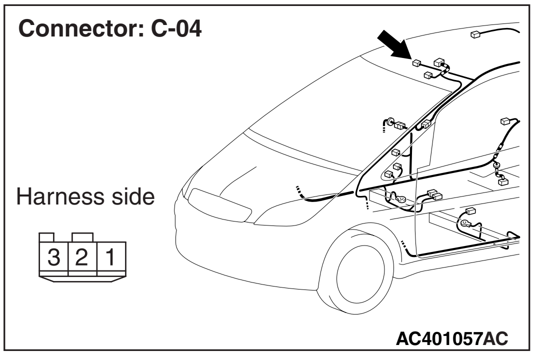
- Check the input and output lines for open circuit.

Q: Is the check result normal?

YES : Replace the ETACS-ECU.

NO : Repair the wiring harness.

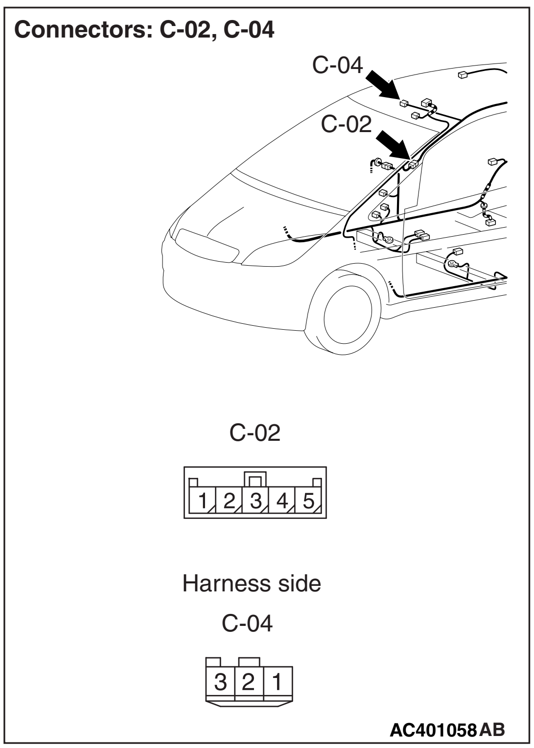
Step 10. Connector check: C-04 room lamp connector



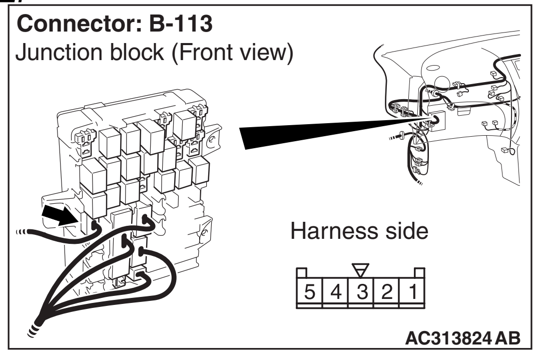
Q: Is the check result normal?

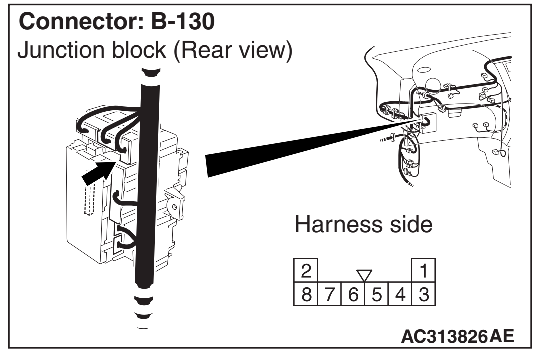
YES : Go to Step 11.
NO : Repair the defective connector.

Step 11. Check the wiring harness from C-04 room lamp connector terminal No.2 to body earth.



NOTE:





Prior to the wiring harness inspection, check intermediate connector C-02 and junction block connector B-113 and B-130 repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?

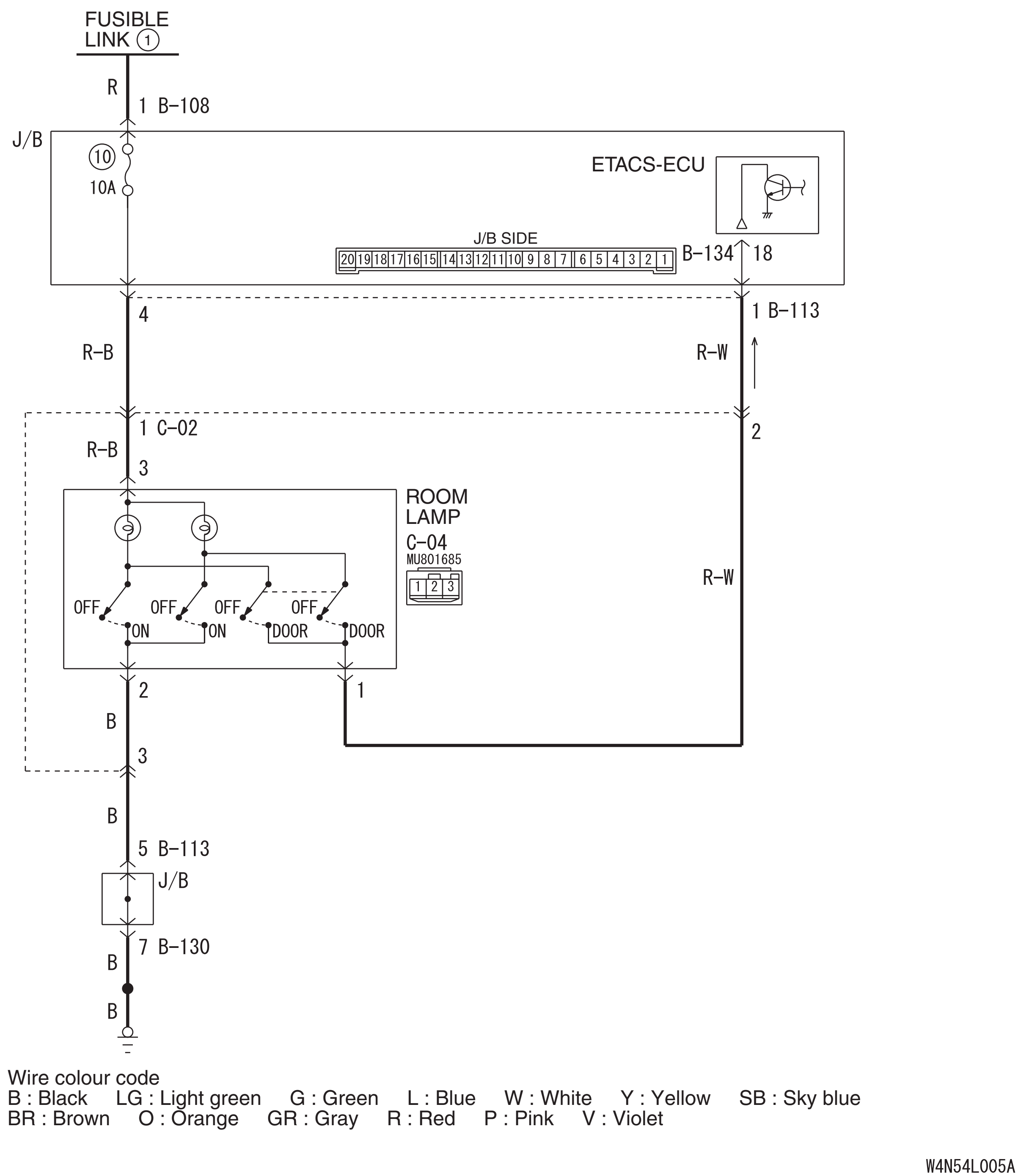
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Repair the wiring harness.

INSPECTION PROCEDURE M-2: The room lamp does not illuminate normally.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Room Lamp Circuit



Main Index
Group TOC

COMMENTS ON TROUBLE SYMPTOM

If the room lamp do not illuminate, the wiring harness connector(s), the bulb or the fuse may be defective or burned out.

POSSIBLE CAUSES

- Malfunction of the room lamp
- Damaged harness wires and connectors

Step 1. Check that the luggage compartment lamp illuminates.

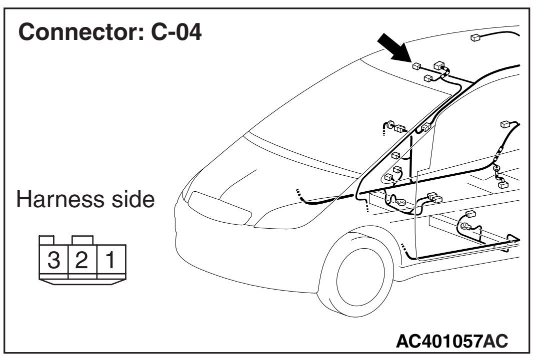
Check that the luggage compartment lamp illuminates normally.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to Inspection Procedure M-1 "The interior lamps (room ramp, luggage compartment lamp) does not illuminate or extinguish normally P.54C-186."

Step 2. Connector check: C-04 room lamp connector



Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the defective connector.

Step 3. Check the bulb.

Check whether the room lamp bulb is normal.

Q: Is the check result normal?

YES : Go to Step 4.

NO : Replace the bulb(s) of the defective lamp.

Step 4. Check the room lamp.

Check whether the room lamp is normal.

Q: Is the check result normal?

YES : Go to Step 5.

NO : Replace the room lamp.

Step 5. Determine a trouble spot.

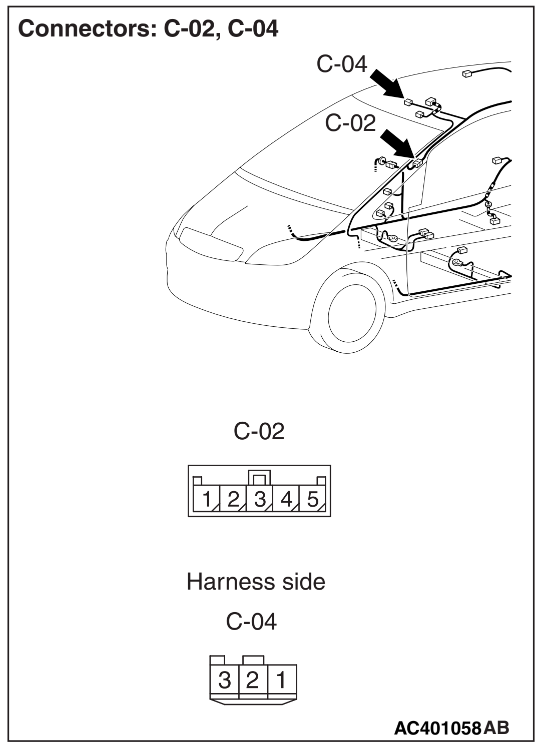
Q: Which switch position (DOOR or ON) does the room lamp illuminate at?

The lamp illuminates at neither the ON or DOOR position. : Go to Step 6.

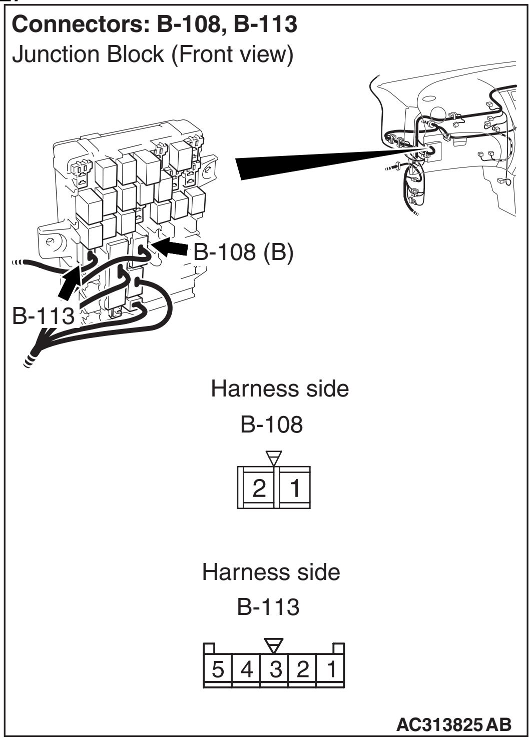
The lamp illuminates at the DOOR position. : Go to Step 7.

The lamp illuminates at the ON position. : Go to Step 9.

Step 6. Check the wiring harness from C-04 room lamp connector terminal No.3 to fusible link (1).



NOTE:



Prior to the wiring harness inspection, check intermediate connector C-02 and junction block connector B-108 and B-113 repair if necessary.

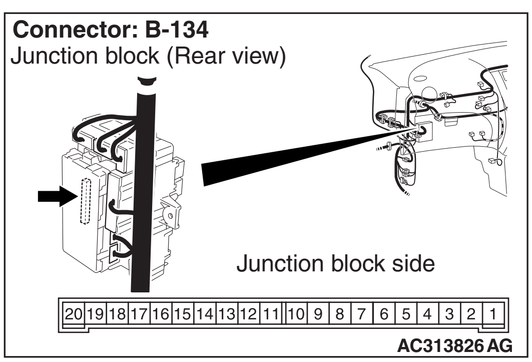
- Check the power supply line for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 7. Connector check: B-134 ETACS-ECU connector

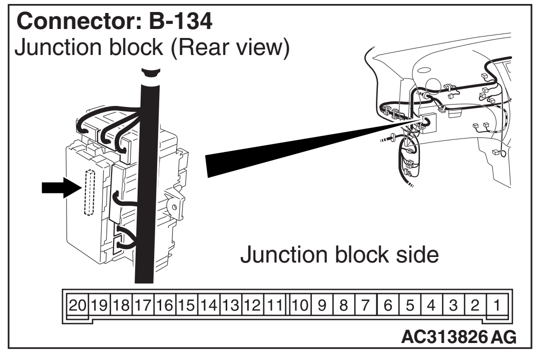


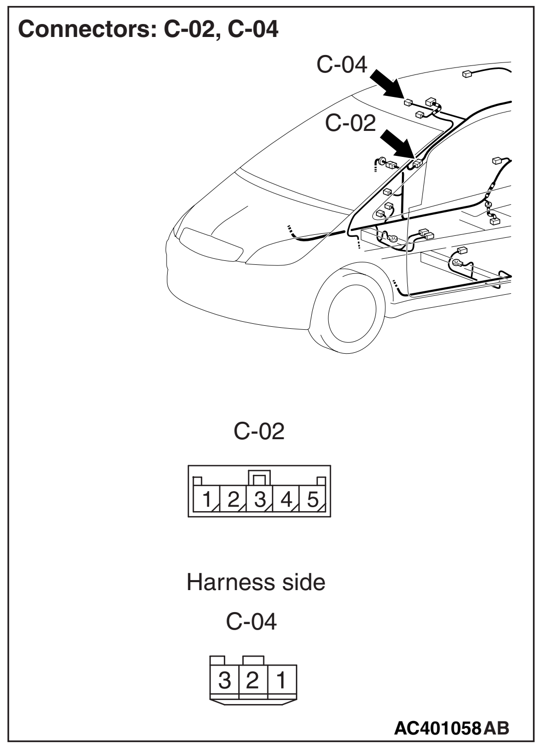
Q: Is the check result normal?

YES : Go to Step 8.

NO : Repair the defective connector.

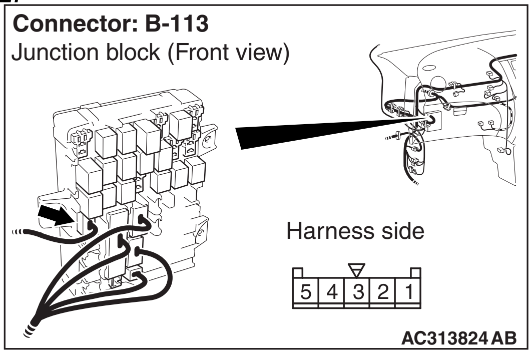
Step 8. Check the wiring harness from B-134 ETACS-ECU connector terminal No.18 to C-04 room lamp connector terminal No.1





Main Index
Group TOC

NOTE:



Prior to the wiring harness inspection, check intermediate connector C-02 and junction block connector B-113 repair if necessary.

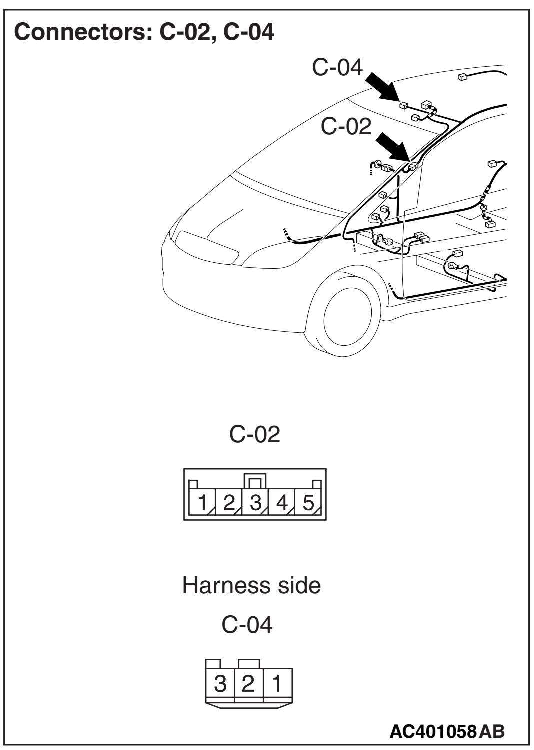
- Check the input and output lines for open circuit.

Q: Is the check result normal?

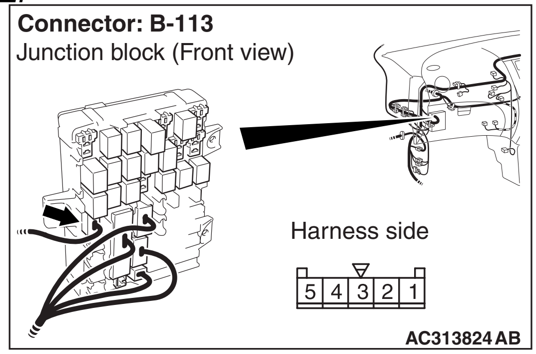
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

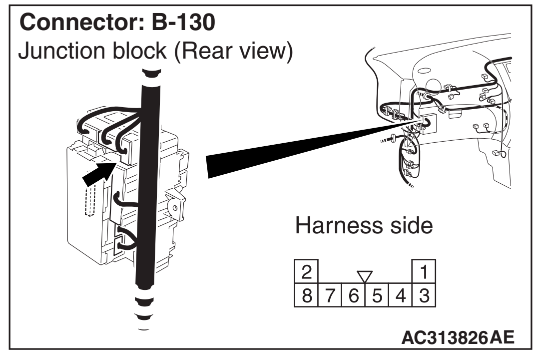
NO : Repair the wiring harness.

Step 9. Check the wiring harness from C-04 room lamp connector terminal No.2 to body earth.



NOTE:





Prior to the wiring harness inspection, check intermediate connector C-02 and junction block connector B-113 and B-130 repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

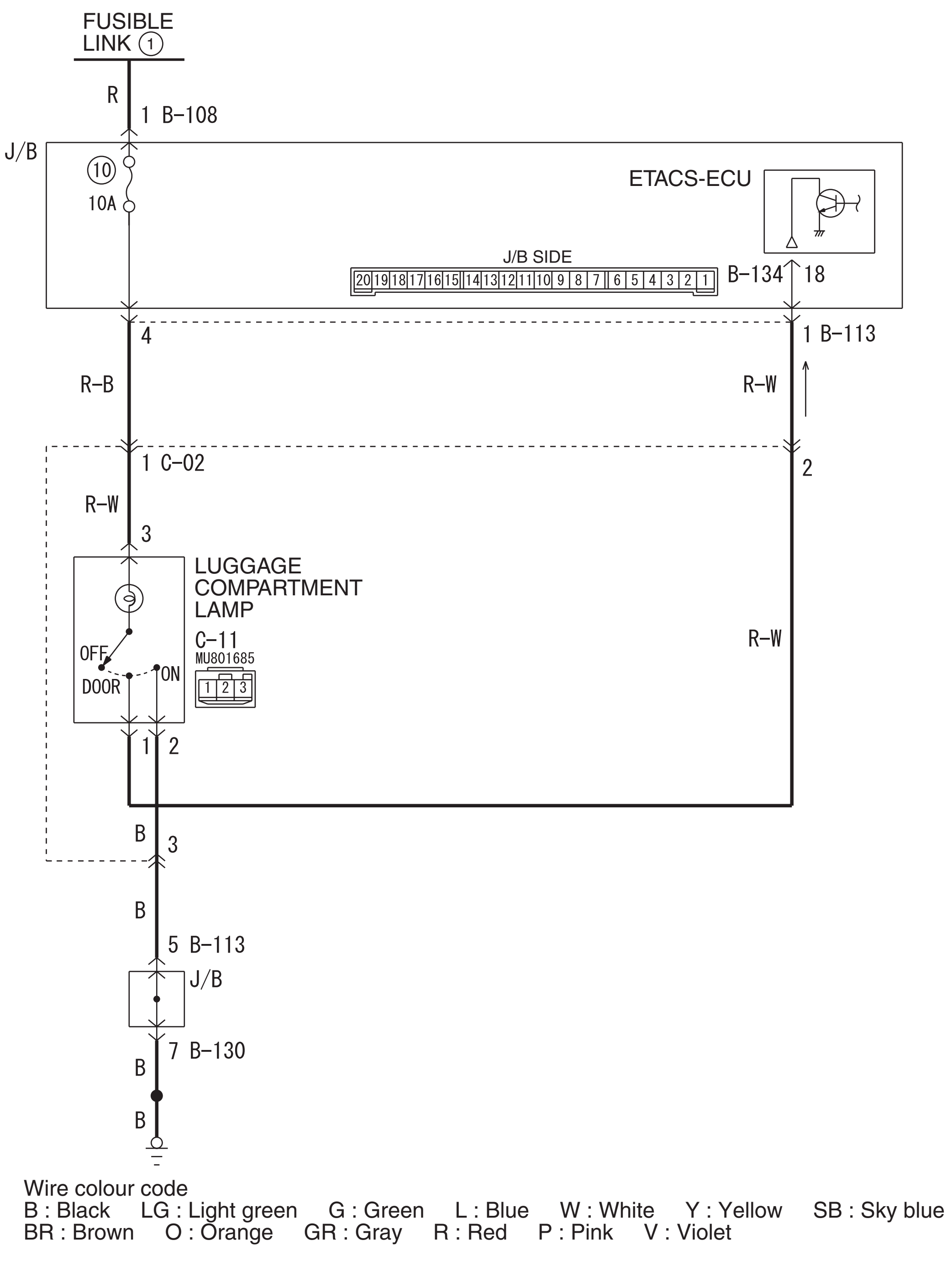
NO : Repair the wiring harness.

INSPECTION PROCEDURE M-3: The luggage compartment lamp does not illuminate normally.

⚠ **CAUTION**

Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Luggage Room Lamp Circuit



Main Index
Group TOC

COMMENTS ON TROUBLE SYMPTOM

If the luggage compartment lamp do not illuminate, the wiring harness connector(s), the bulb or the fuse may be defective or burned out.

POSSIBLE CAUSES

- Malfunction of the luggage compartment lamp
- Damaged harness wires and connectors

Step 1. Check if the room lamp illuminates.

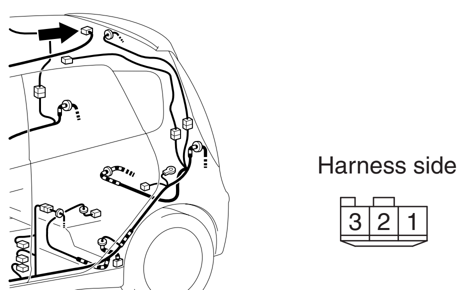
Check whether the room lamp illuminates normally.

Q: Is the check result normal?

YES : Go to Step 2.
NO : Refer to Inspection Procedure M-1 "The interior lamps (room ramp, luggage compartment lamp) does not illuminate or extinguish normally P.54C-186."

Step 2. Connector check: C-11 luggage compartment lamp connector

Connector: C-11



AC401059AD

Q: Is the check result normal?

YES : Go to Step 3.
NO : Repair the defective connector.

Step 3. Check the bulb.

Check that the luggage compartment lamp bulb is not blown.

Q: Is the check result normal?

YES : Go to Step 4.
NO : Replace the luggage compartment lamp bulb.

Step 4. Check the luggage compartment lamp.

Check whether the luggage compartment lamp illuminates normally.

Q: Is the check result normal?

YES : Go to Step 5.
NO : Replace the luggage compartment lamp.

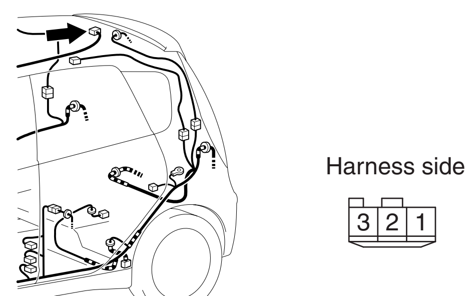
Step 5. Determine a trouble spot.

Q: Which switch position (DOOR or ON) does the luggage compartment lamp illuminate at?

The lamp illuminates at neither the ON nor DOOR position. : Go to Step 6.
The lamp illuminates at the DOOR position. : Go to Step 7.
The lamp illuminates at the ON position. : Go to Step 9.

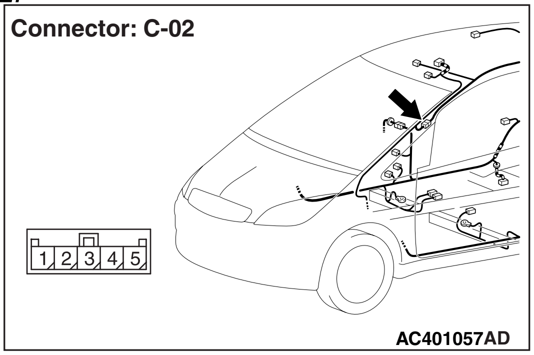
Step 6. Check the wiring harness from C-11 luggage compartment lamp connector terminal No.3 to fusible link (1).

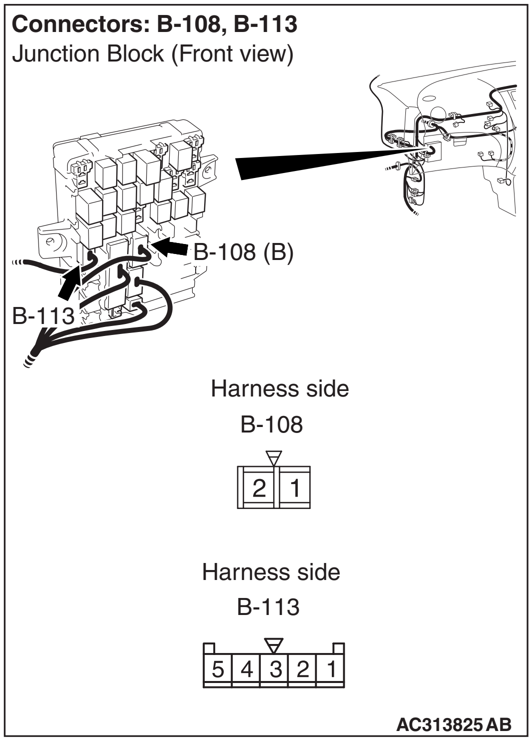
Connector: C-11



AC401059AD

NOTE:





Prior to the wiring harness inspection, check intermediate connector C-02 and junction block connector B-108 and B-113 repair if necessary.

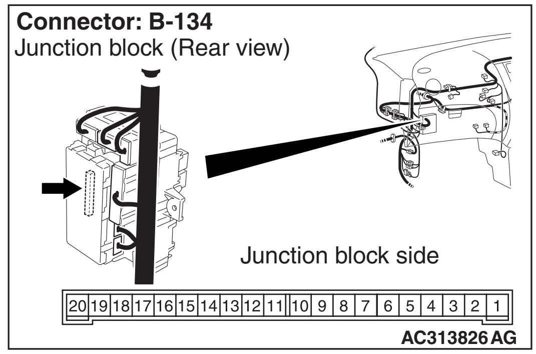
- Check the power supply line for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 7. Connector check: B-134 ETACS-ECU connector

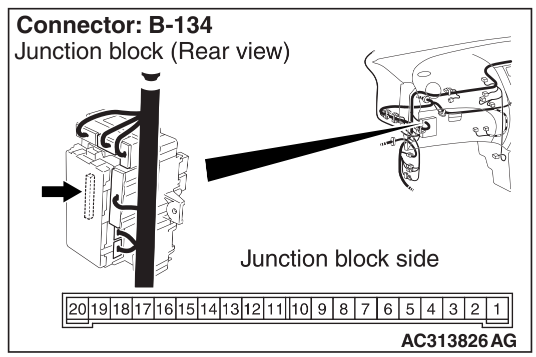


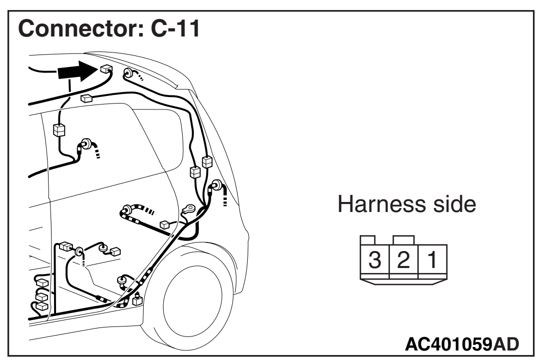
Q: Is the check result normal?

YES : Go to Step 8.

NO : Repair the defective connector.

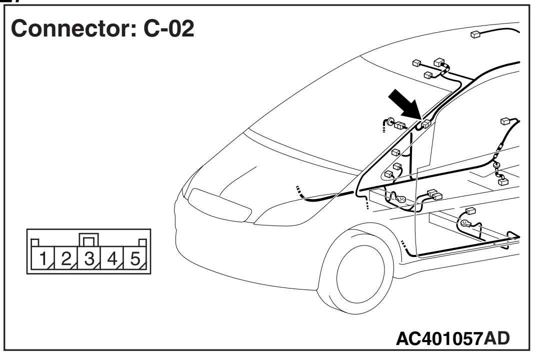
Step 8. Check the wiring harness from B-134 ETACS-ECU connector terminal No.18 to C-11 luggage compartment lamp connector terminal No.1

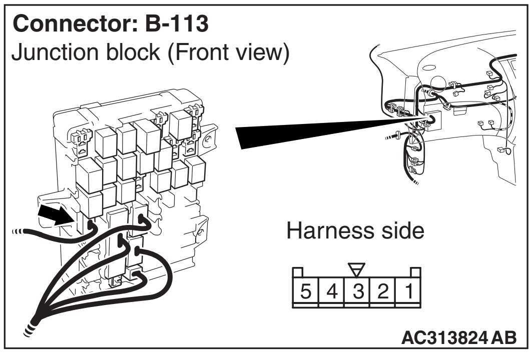




Main Index
Group TOC

NOTE:





Prior to the wiring harness inspection, check intermediate connector C-02 and junction block connector B-113 repair if necessary.

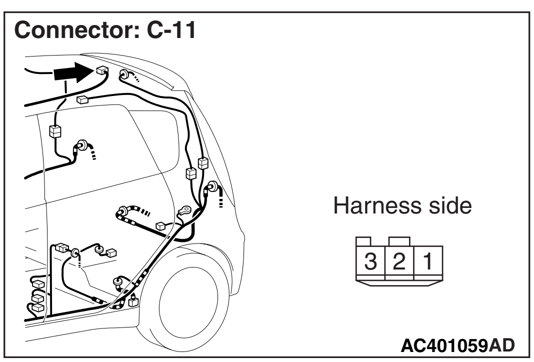
- Check the input and output lines for open circuit.

Q: Is the check result normal?

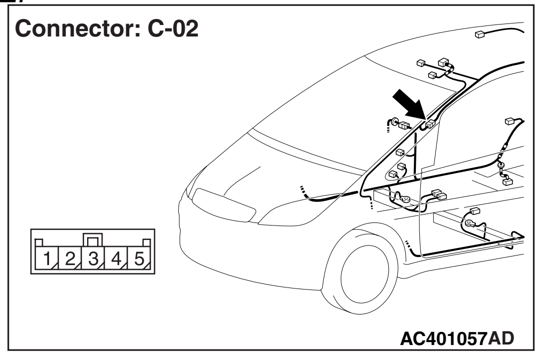
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

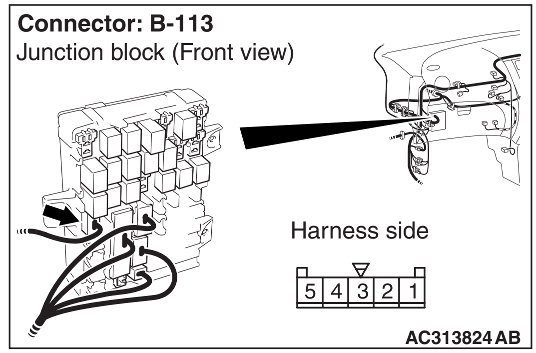
NO : Repair the wiring harness.

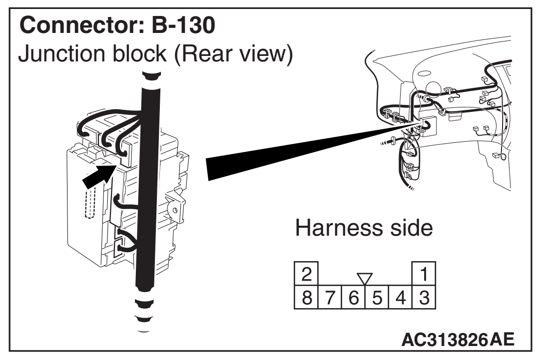
Step 9. Check the wiring harness from C-11 luggage compartment lamp connector terminal No.2 to body earth.



NOTE:







Prior to the wiring harness inspection, check intermediate connector C-02 and junction block connector B-113 and B-130 repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

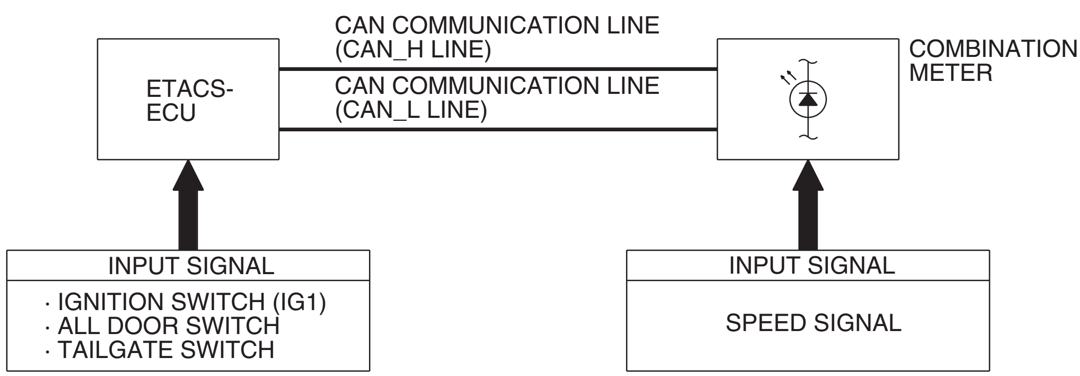
NO : Repair the wiring harness.

Main Index
Group TOC

INSPECTION PROCEDURE M-4: The door-ajar warning lamp does not illuminate/extinguish normally.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Door-Ajar Warning Lamp Function



COMMENTS ON TROUBLE SYMPTOM

If the door-ajar warning lamp does not work normally, the input signal circuit or the ETACS-ECU may be defective.

POSSIBLE CAUSES

- Malfunction of the all door switches
- Malfunction of the combination meter
- Malfunction of the CAN bus line
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. M.U.T.-III CAN bus diagnostics

Use the M.U.T.-III to diagnose the CAN bus lines.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54D, Diagnosis P.54D-13).

Step 2. M.U.T.-III other system diagnosis code

Check whether the combination meter-related diagnosis code is set.

Q: Is the diagnosis code set?
YES : Diagnose the combination meter (Refer to GROUP 54A – Troubleshooting P.54A-31).
NO : Go to Step3.

Step 3. ECU check by using the SWS monitor

Check that the power supply and earth lines to the ETACS-ECU and the SWS communication lines are normal.

- Ignition switch: OFF

ECU TO BE CHECKED

- ETACS ECU

OK: "OK" is displayed on the "ETACS ECU" menu.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible P.54C-41."

Main Index
Group TOC

Step 4. SWS monitor data list

Check the SWS communication signal, which is related to the door-ajar warning lamp.

<Selected item> ETACS ECU

- Ignition switch: ON position
- Driver's door: open

Item No.	Item name	Normal condition
Item 30	IG SW(IG1)	ON
Item 32	DR DOOR SW	ON

OK: Normal conditions are displayed for all the items.

Q: Is the check result normal?

Normal conditions are displayed for all the items. : Go to Step 5.

Normal condition is not displayed for item No.30. : Refer to inspection procedure N-2 "The ignition switch (IG1) signal is not received P.54C-203."

Normal condition is not displayed for item No.32. : Refer to inspection procedure N-3 "The driver's door switch signal is not received P.54C-205."

Step 5. ETACS switch data by using the SWS monitor

Check the ETACS-ECU input signal related to the door-ajar warning buzzer function.

- Doors other than the driver's door (including the tailgate): Closed to open

Item No.	Item name	Normal condition
Item 40	ALL DOOR SW	ON

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : Go to Step 6.

NO : Refer to inspection procedure N-10 "All the door switch signals are not received P.54C-222."

Step 6. M.U.T.-III actuator test

Perform the actuator test for the combination meter, and check that the door-ajar warning lamp illuminates (Refer to GROUP 54A – Combination Meter P.54A-62).

Q: Is the check result normal?

YES : Replace the ETACS-ECU.

NO : Replace the combination meter.

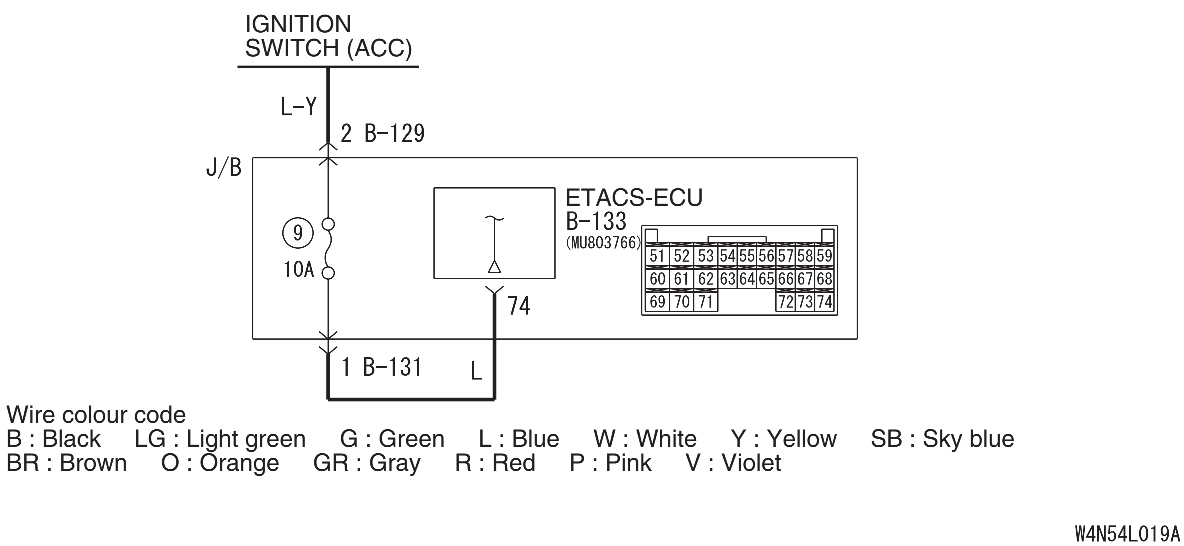
Main Index
Group TOC

INPUT SIGNAL PROCEDURES

Inspection Procedure N-1: The ignition switch (ACC) signal is not received.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

Ignition Switch (ACC) Input Circuit



COMMENTS ON TROUBLE SYMPTOM

Input signal from the ignition switch (ACC) is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

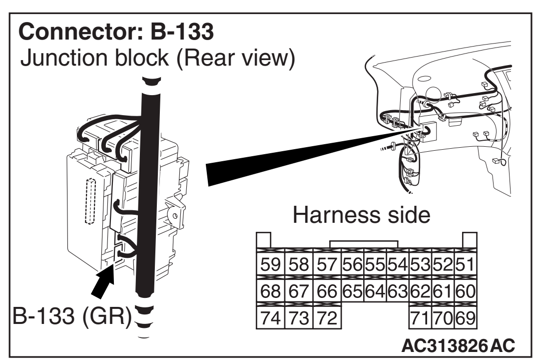
- Windshield wiper and washer
- Rear wiper and washer
- Electric retractable remote controlled door mirror

POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

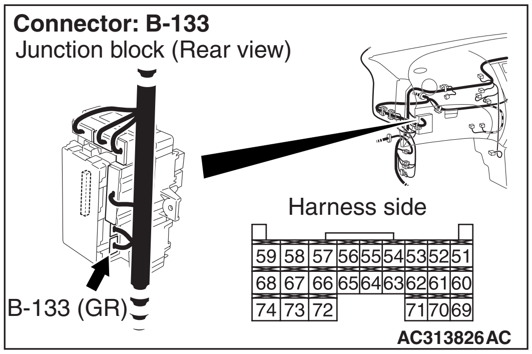
Step 1. Connector check: B-133 ETACS-ECU connector



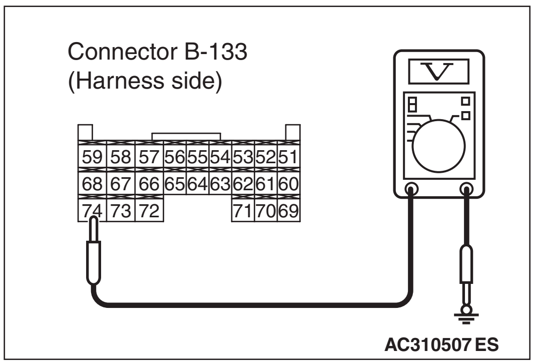
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Main Index
Group TOC

Step 2. Voltage measurement at the B-133 ETACS-ECU connector.



(1) Remove the ETACS-ECU, and measure at the junction block side.
(2) Ignition switch: ACC position



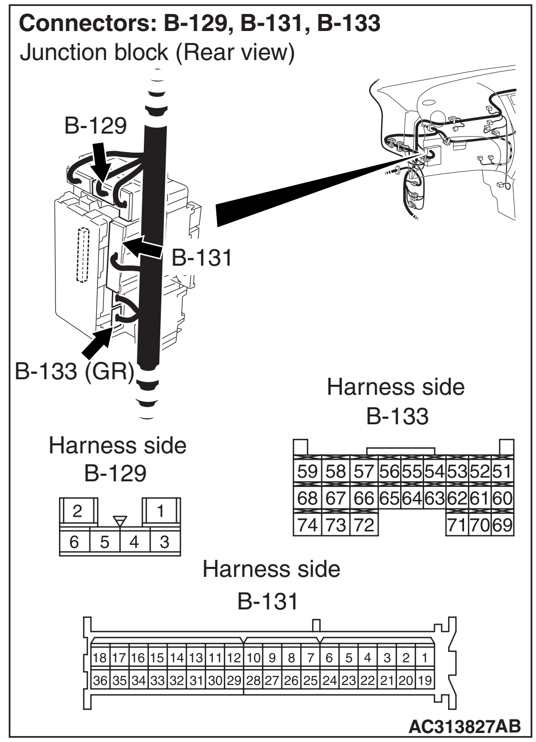
(3) Voltage between B-133 ETACS-ECU connector terminal No.74 and body earth

OK: System voltage

Q: Is the check result normal?

YES : Go to Step 4.
NO : Go to Step 3.

Step 3. Check the wiring harness between B-133 ETACS-ECU connector terminal No.74 to the ignition switch (ACC).



NOTE: Prior to the wiring harness inspection, check junction block connector B-129 and B-131, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Repair the wiring harness.

Step 4. SWS monitor data list

Check the input signal from the ignition switch.

<Selected item> ETACS ECU

- Ignition switch: OFF (LOCK) → ACC

Item No.	Item name	Normal condition
Item 31	IG SW(ACC)	from OFF to ON

OK: Normal condition is displayed.

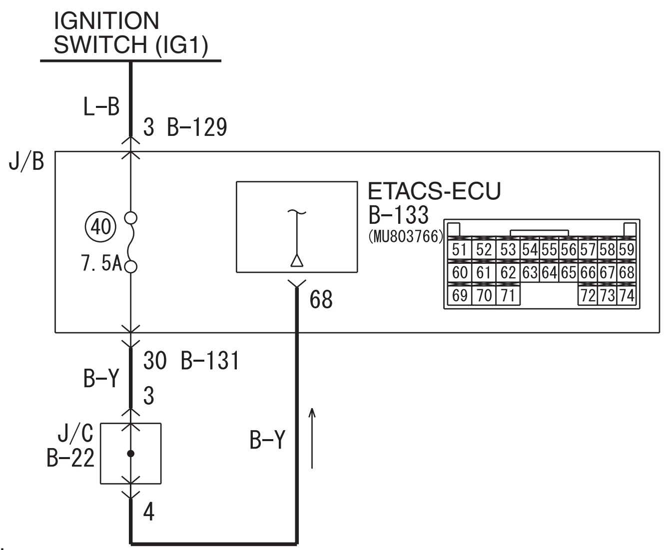
Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Replace the ETACS-ECU.

Inspection Procedure N-2: The ignition switch (IG1) signal is not received.

⚠ **CAUTION**
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

Ignition Switch (IG1) Input Circuit



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4N54L020A

COMMENTS ON TROUBLE SYMPTOM

Input signal from the ignition switch (IG1) is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

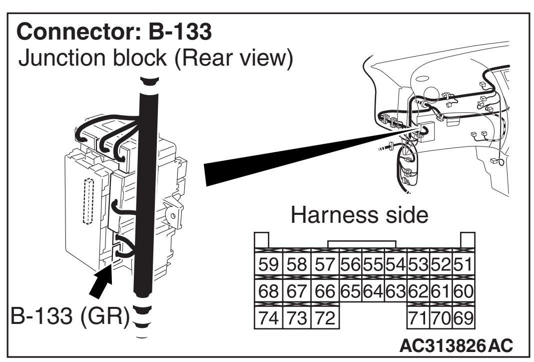
- Lamp reminder buzzer
- Power window timer
- Electric retractable remote controlled door mirror
- Ignition key cylinder illumination lamp
- Turn-signal lamp
- Room lamp

POSSIBLE CAUSES

- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

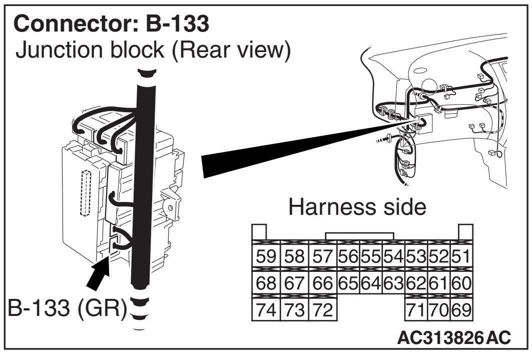
Step 1. Connector check: B-133 ETACS-ECU connector



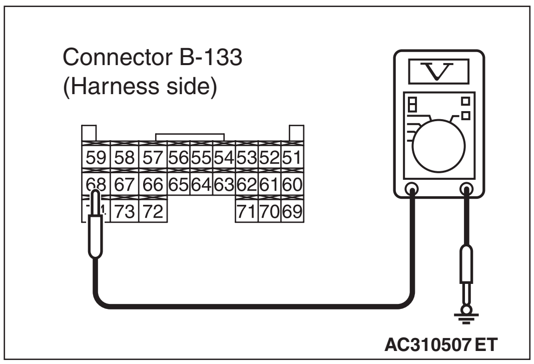
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Main Index
Group TOC

Step 2. Voltage measurement at the B-133 ETACS-ECU connector.



(1) Remove the ETACS-ECU, and measure at the junction block side.
(2) Ignition switch: ON position



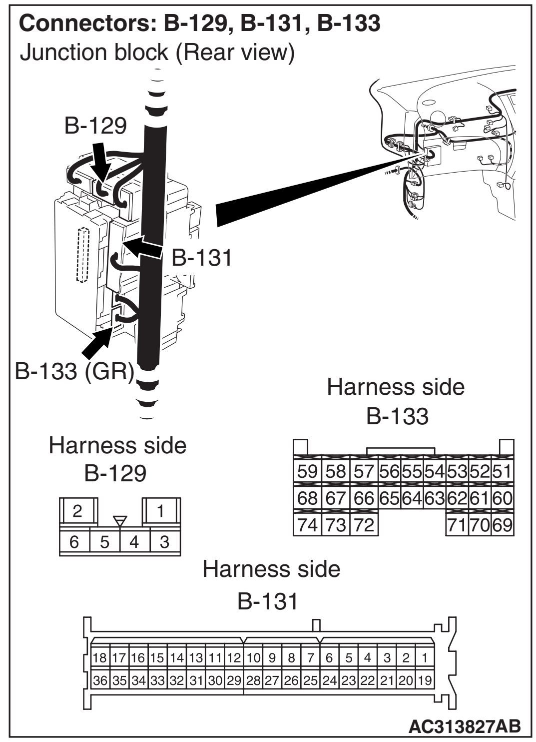
(3) Voltage between B-133 ETACS-ECU connector terminal No.68 and body earth

OK: System voltage

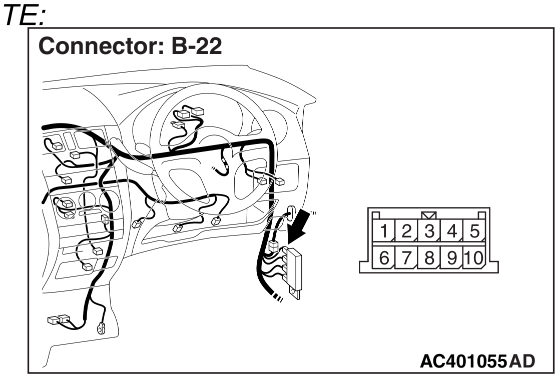
Q: Is the check result normal?

YES : Go to Step 4.
NO : Go to Step 3.

Step 3. Check the wiring harness between B-133 ETACS-ECU connector terminal No.68 to the ignition switch (IG1).



NOTE:



Prior to the wiring harness inspection, check joint connector B-22 and junction block connector B-129 and B-131, and repair if necessary.

- Check the power supply line for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Repair the wiring harness.

Main Index
Group TOC

Step 4. SWS monitor data list.
Check the input signal from the ignition switch.

<Selected item> ETACS ECU

- Ignition switch: ACC → ON

Item No.	Item name	Normal condition
Item 30	IG SW(IG1)	from OFF to ON

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

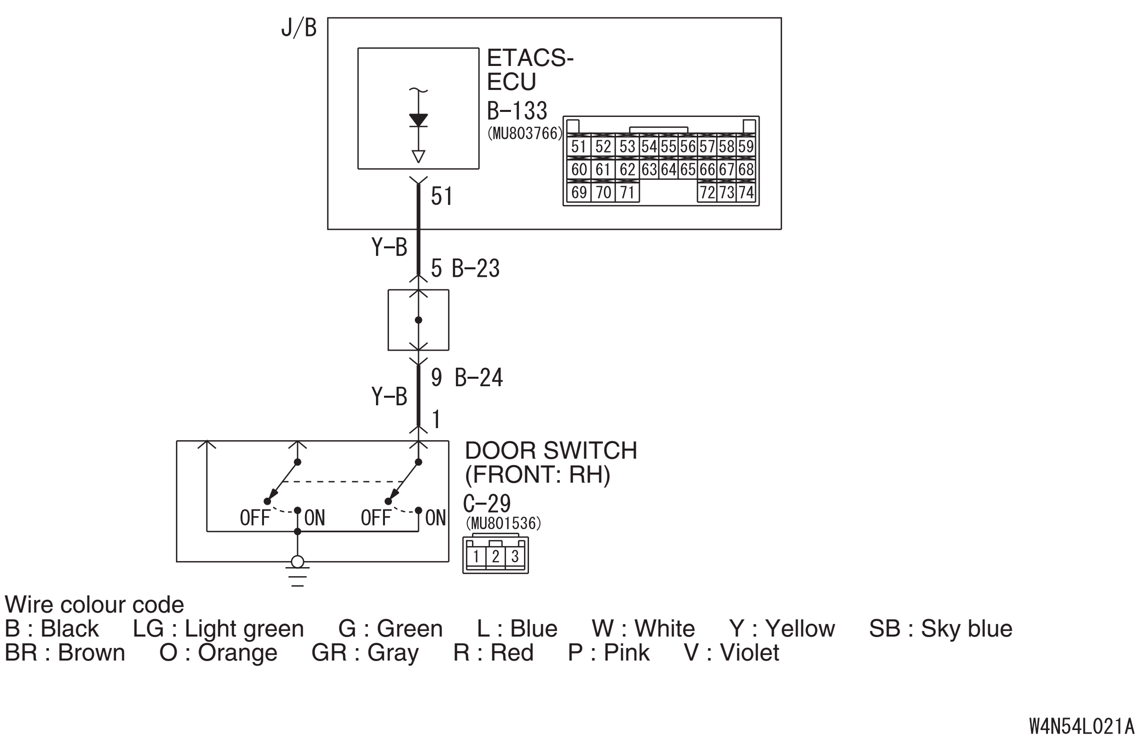
NO : Replace the ETACS-ECU.

Inspection Procedure N-3: The driver's door switch signal is not received.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input signal circuit is normal.

Driver's Door Switch Input Circuit



Main Index
Group TOC

COMMENTS ON TROUBLE SYMPTOM

Input signal from the driver's door switch is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

- Lamp reminder buzzer
- Keyless entry system
- Power window timer
- Ignition key cylinder illumination lamp
- Door-ajar warning lamp

POSSIBLE CAUSES

- Malfunction of the driver's door switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

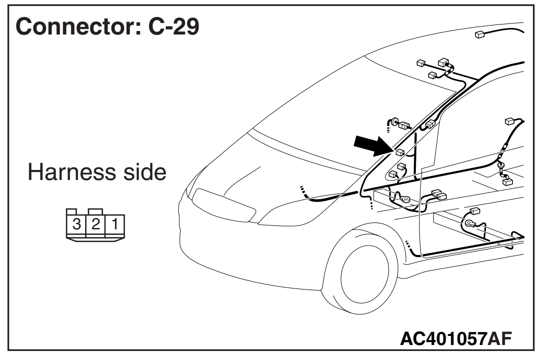
DIAGNOSIS PROCEDURE

Step 1. Check the installation condition.

Check that the front door switch (RH) is installed on the body correctly.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Correct the installation condition.

Step 2. Connector check: C-29 front door switch (RH) connector.



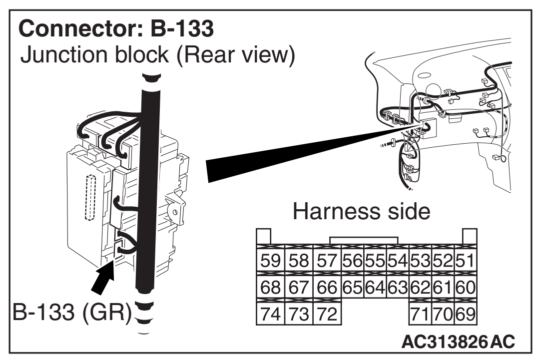
Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

Step 3. Check the front door switch (RH).

Refer to GROUP 42 – Door P.42-39.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the front door switch (RH).

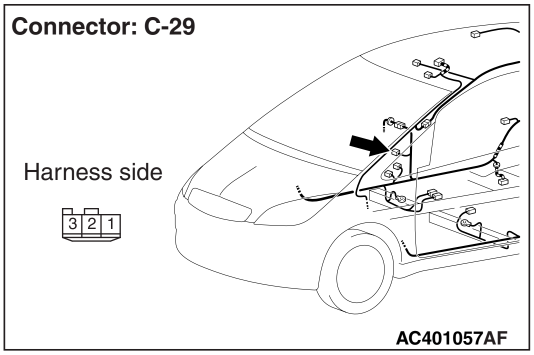
Step 4. Connector check: B-133 ETACS-ECU connector.

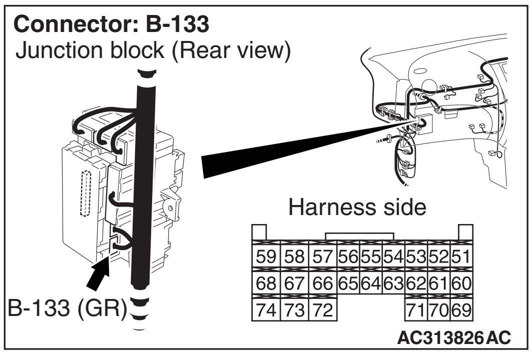


Q: Is the check result normal?
YES : Go to Step 5.
NO : Repair the defective connector.

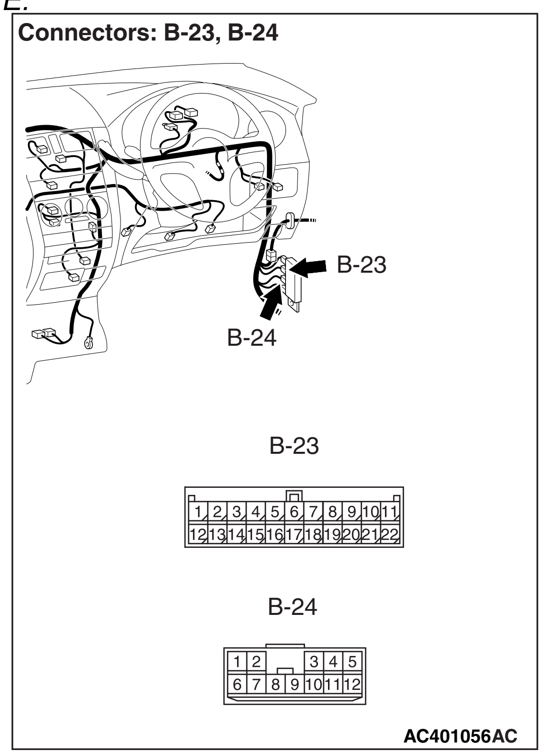
Main Index
Group TOC

Step 5. Check the wiring harness between C-29 front door switch (RH) connector terminal No.1 to B-133 ETACS-ECU connector terminal No.51.





NOTE:



Prior to the wiring harness inspection, check joint connector B-23 and B-24, and repair if necessary.

- Check the input line for open circuit.

Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair the wiring harness.

Step 6. SWS monitor data list

Check the input signal from the driver's door switch.

<Selected item> ETACS ECU

- Driver's door: close → open

Item No.	Item name	Normal condition
Item 32	DR DOOR SW	from OFF to ON

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

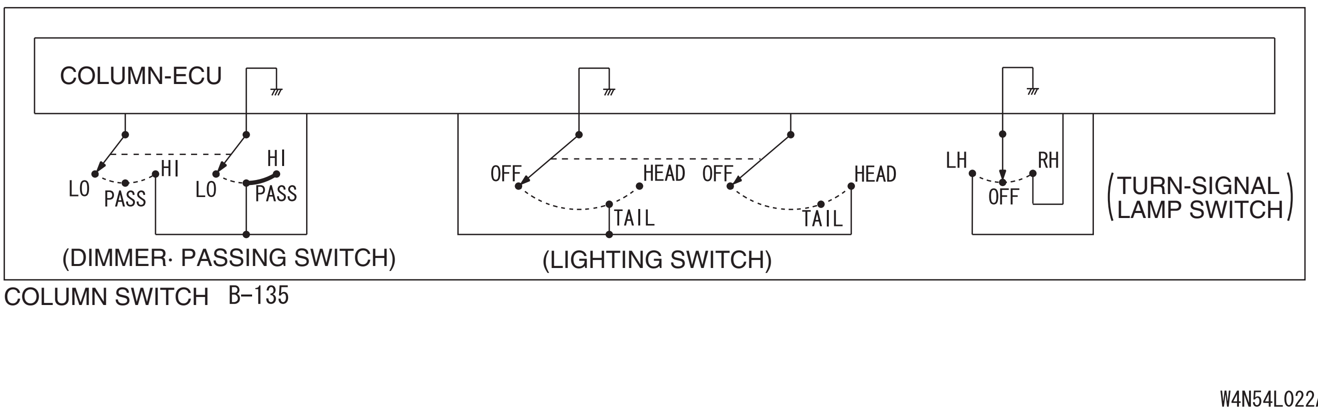
NO : Replace the ETACS-ECU.

Main Index
Group TOC

Inspection Procedure N-4: The column switch (lighting and turn-signal lamp switch) signal is not received.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

Lighting Switch Input Circuit



COMMENTS ON TROUBLE SYMPTOM

Input signal from the column switch (lighting and turn-signal lamp switch) is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

- Lamp reminder buzzer
- Headlamp and tail lamp
- Fog lamp
- Turn signal lamp

POSSIBLE CAUSES

- Malfunction of the column switch
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Check the column switch connector.

Check that the wiper and washer switch connector, the lighting switch connector and the switch body connector are in good condition.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Step 2. Check the column switch (lighting switch and switch body).

Refer to GROUP 54A – Column switch P.54A-90.

Q: Is the check result normal?
YES : Go to Step 3.
NO : Replace the column switch.

Step 3. ECU check by using the SWS monitor

Check that the power supply and earth lines to the column switch (column-ECU) and the SWS communication lines are normal.

- Ignition switch: OFF

ECU TO BE CHECKED

- COLUMN ECU

OK: "OK" is displayed on the "COLUMN ECU" menu.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible P.54C-37."

Main Index
Group TOC

Step 4. SWS monitor data list

<Selected item> COLUMN ECU

- Operate each function of the switch.

Item No.	Item name	Normal condition
Item 00	HEADLAMP SW	ON
Item 01	TAIL LAMP SW	ON
Item 02	DIMMER SW	ON
Item 03	PASSING SW	ON
Item 10	TURN SIG.RH	ON
Item 11	TURN SIG.LH	ON

OK: Normal conditions are displayed for all the functions of the switch.

Q: Are the check results normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

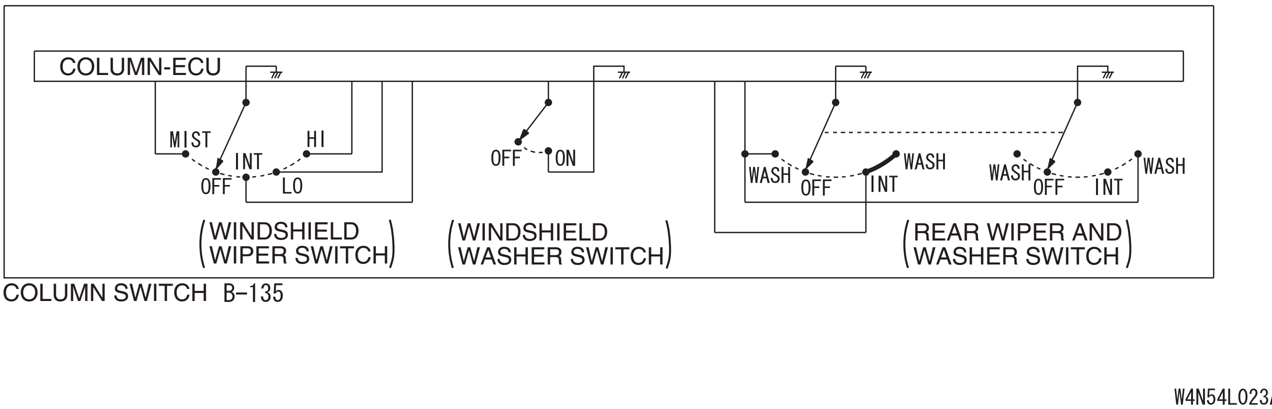
NO : Replace the column switch.

Main Index
Group TOC

Inspection Procedure N-5: The column switch (windshield wiper washer and rear wiper washer switch) signal is not received.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

Wiper and Washer Switch Input Circuit



COMMENTS ON TROUBLE SYMPTOM

Input signal from the column switch (wiper switch) is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

- Windshield wiper and washer
- Rear wiper and washer

POSSIBLE CAUSES

- Malfunction of the column switch
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. ECU check by using the SWS monitor

Check that the power supply and earth lines to the column switch (column-ECU) and the SWS communication lines are normal.

- Ignition switch: OFF

ECU TO BE CHECKED

- COLUMN ECU

OK: "OK" is displayed on the "COLUMN ECU" menu.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to Inspection Procedure A-2 "Communication with column switch (column-ECU) is not possible P.54C-37."

Step 2. SWS monitor data list

<Selected item> COLUMN ECU

Operate each function of the switch.

Item No.	Item name	Normal condition
Item 05	INT WIPER SW	ON
Item 06	LO WIPER SW	ON
Item 07	HI WIPER SW	ON
Item 08	MIST WIPER SW	ON
Item 09	FRONT WASH.SW	ON
Item 13	REAR WIPER SW	ON
Item 14	REAR WASH.SW	ON

OK: Normal conditions are displayed for all the functions of the switch.

Q: Are the check results normal?

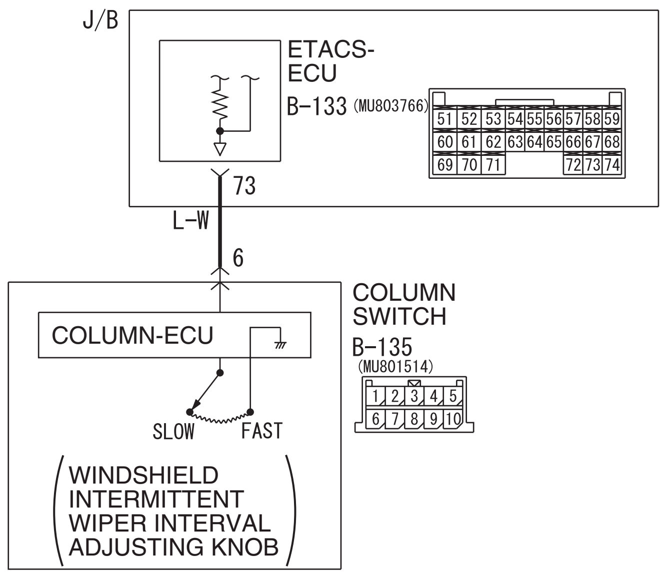
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the column switch.

Inspection Procedure N-6: The windshield intermittent wiper volume signal is not received.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

Windshield Intermittent Wiper Interval Adjusting Knob Input Circuit



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4N54L024A

COMMENTS ON TROUBLE SYMPTOM

The intermittent wiper interval is calculated in accordance with the input signal from the windshield intermittent wiper volume. If this signal is abnormal, the wiper interval can not be adjusted.

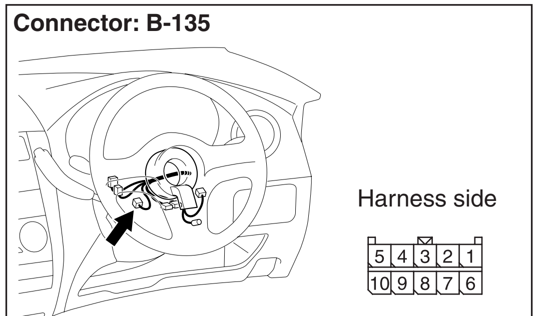
POSSIBLE CAUSES

- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: B-135 column switch connector.

Connector: B-135

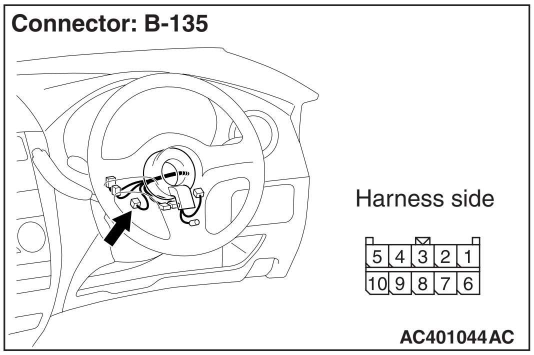


AC401044AC

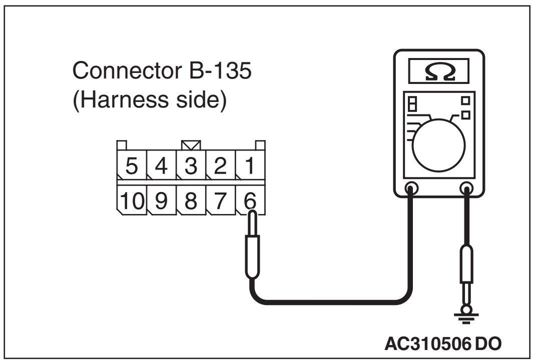
Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Main Index
Group TOC

Step 2. Resistance measurement at the B-135 column switch connector.



(1) Disconnect the connector, and measure at the column switch side.



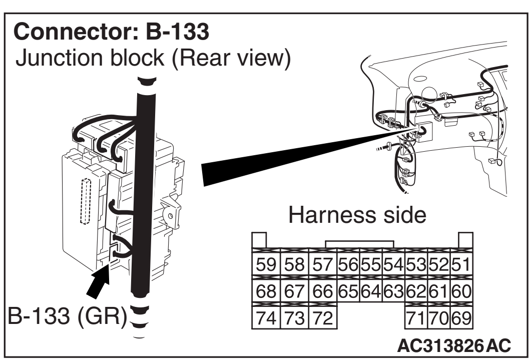
(2) Resistance between B-135 column switch connector terminal No.6 and body earth

OK: The resistance should rise from 0 to 1 kΩ when the windshield intermittent wiper volume is rotated from "Fast" to "Slow".

Q: Is the check result normal?

YES : Go to Step 3.
NO : Replace the column switch.

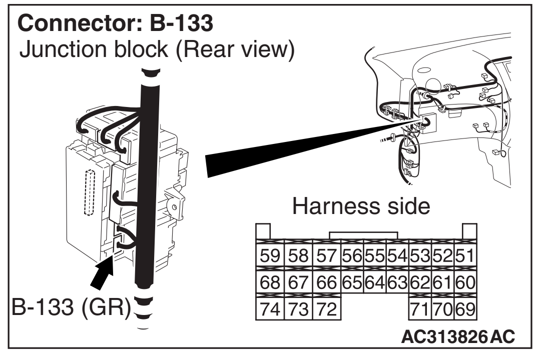
Step 3. Connector check: B-133 ETACS-ECU connector.

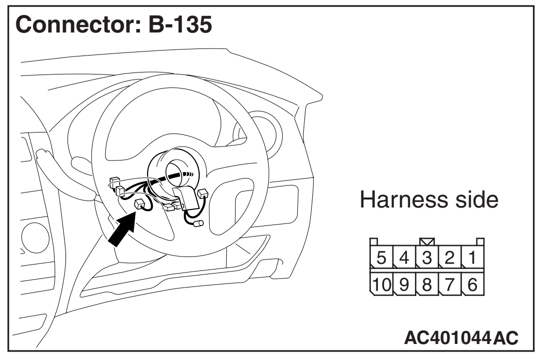


Q: Is the check result normal?

YES : Go to Step 4.
NO : Repair the defective connector.

Step 4. Check the wiring harness between B-135 column switch connector terminal No.6 to B-133 ETACS-ECU connector terminal No.73.





- Check the input line for open circuit.

Q: Is the check result normal?

YES : Go to Step 5.
NO : Repair the wiring harness.

Step 5. ETACS ANALOG data by using the SWS monitor.

Check the input signal from the windshield intermittent wiper volume.

- Ignition switch: ACC
- Wiper switch: INT

Item No.	Item name	Normal condition
Item 02	INT WIPE TIME	2.4 to 18.0 s

OK: The display will be changed as the intermittent wiper volume is rotated.

Q: Is the check result normal?

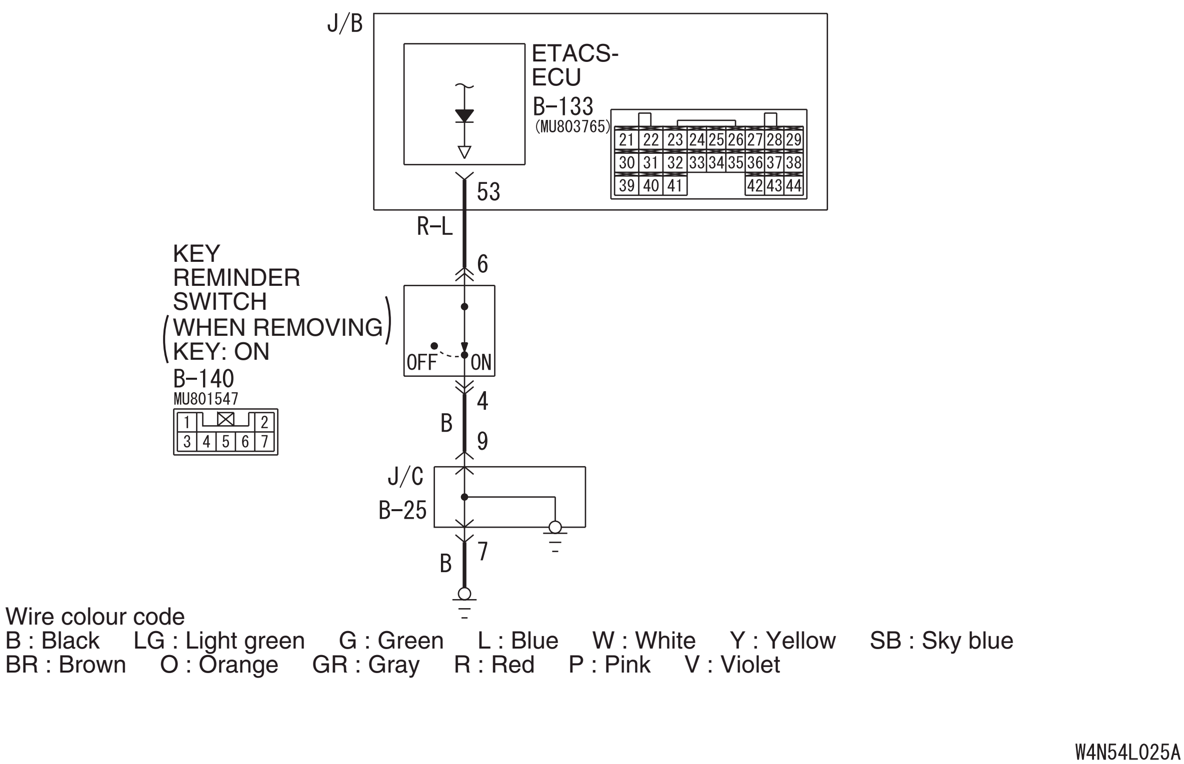
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).
NO : Replace the ETACS-ECU.

Main Index
Group TOC

Inspection Procedure N-7: The key reminder switch signal is not received.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

Key Reminder Switch Input Circuit



COMMENTS ON TROUBLE SYMPTOM

Input signal from the key reminder switch is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

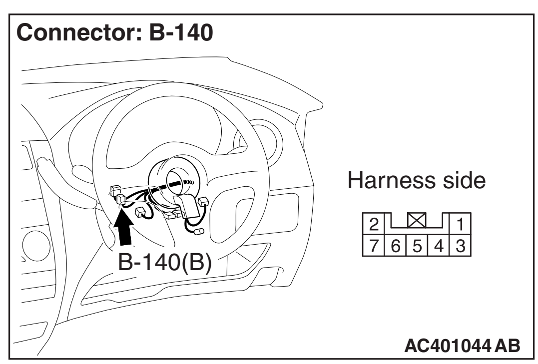
- Keyless entry system
- Ignition key cylinder illumination lamp
- Room lamp

POSSIBLE CAUSES

- Malfunction of the key reminder switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: B-140 key reminder switch connector



Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Main Index
Group TOC

Step 2. Check the key reminder switch.

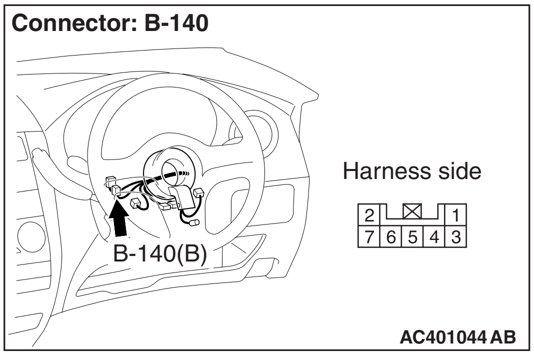
Refer to GROUP 54A – Ignition switch P.54A-27.

Q: Is the check result normal?

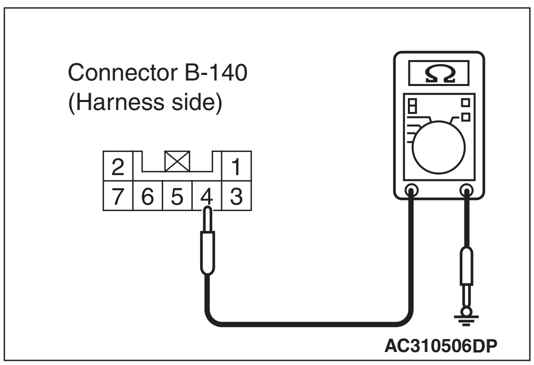
YES : Go to Step 3.

NO : Replace the key reminder switch.

Step 3. Resistance measurement at the B-140 key reminder switch connector.



(1) Disconnect the connector, and measure at the wiring harness side.



(2) Resistance between B-140 key reminder switch connector terminal No.4 and body earth

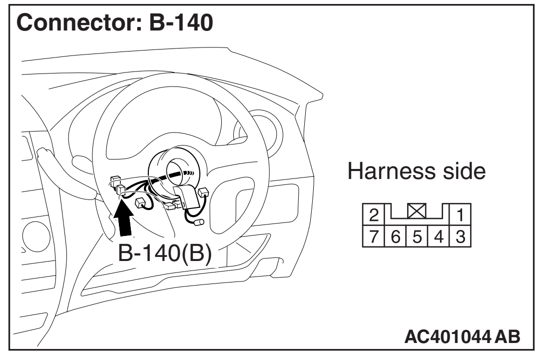
OK: Continuity exists (2 Ω or less)

Q: Is the check result normal?

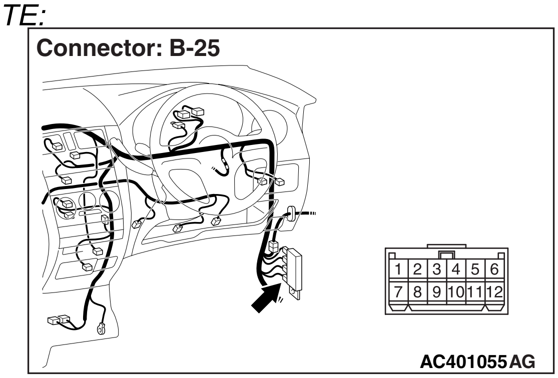
YES : Go to Step 5.

NO : Go to Step 4.

Step 4. Check the wiring harness between B-140 key reminder switch connector terminal No.4 to the body earth.



NOTE:



Prior to the wiring harness inspection, check joint connector B-25, and repair if necessary.

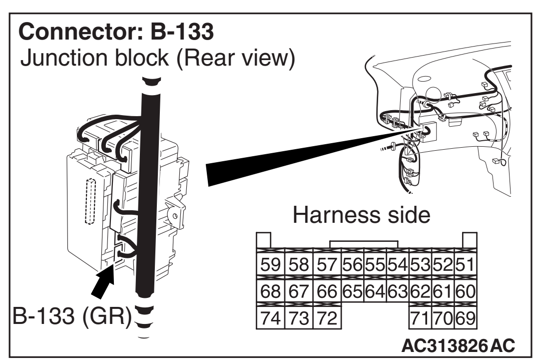
- Check the earth wires for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 5. Connector check: B-133 ETACS-ECU connector



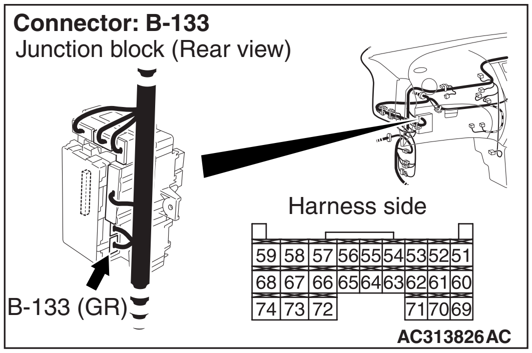
Q: Is the check result normal?

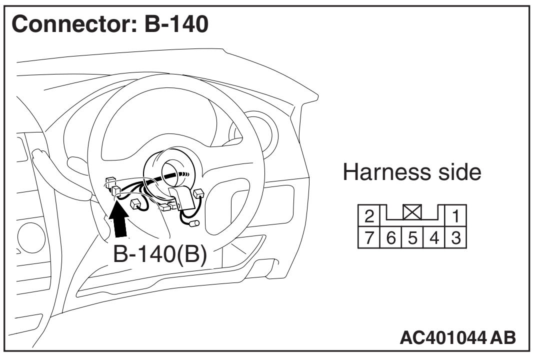
YES : Go to Step 6.

NO : Repair the defective connector.

Main Index
Group TOC

Step 6. Check the wiring harness between B-140 key reminder switch connector terminal No.6 to B-133 ETACS-ECU connector terminal No.53.





- Check the input line for open circuit.

Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the wiring harness.

Step 7. ETACS switch data by using the SWS monitor

Check the input signal from the key reminder switch.

- Key reminder switch: OFF (key inserted) to ON (key removed)

Item No.	Item name	Normal condition
Item 03	KEY REMIN SW	from OFF to ON

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Replace the ETACS-ECU.

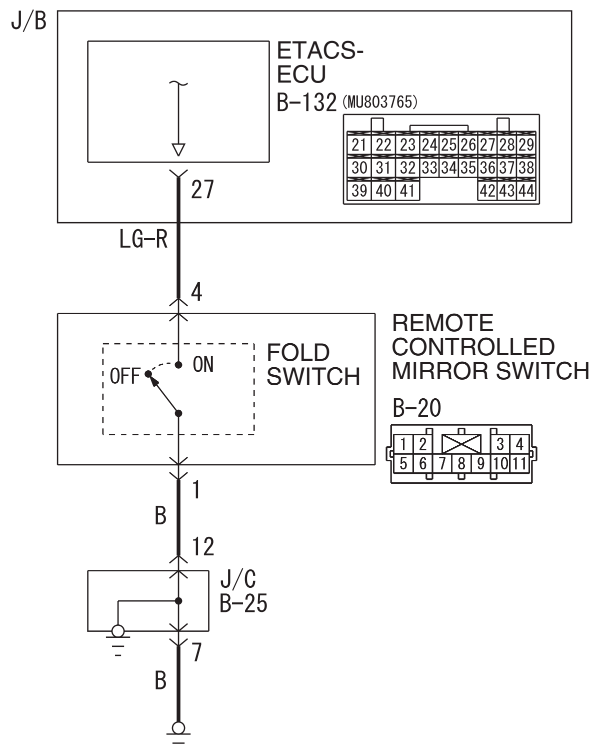
Main Index
Group TOC

Inspection Procedure N-8: Signal is not received from the remote controlled mirror switch (folding/unfolding switch).

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input signal circuit is normal.

Remote Controlled Mirror Switch Input Circuit



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Grey R : Red P : Pink V : Violet PU : Purple

W6N54L010A

COMMENTS ON TROUBLE SYMPTOM

The electric-folding door mirrors work in accordance with the input signal from the remote controlled mirror switch. If the input signal is abnormal, the door mirrors will not work normally.

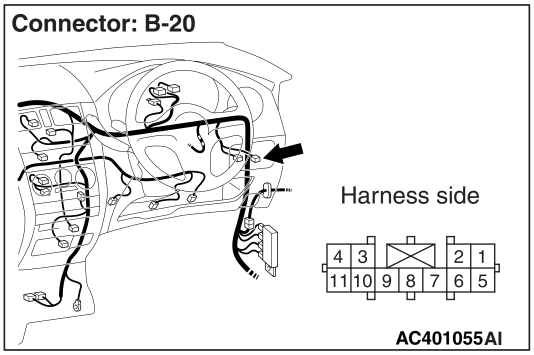
POSSIBLE CAUSES

- Malfunction of the remote controlled mirror switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

Main Index
Group TOC

DIAGNOSIS PROCEDURE

Step 1. Connector check: B-20 remote controlled mirror switch connector



Q: Is the check result normal?

YES : Go to Step 2.
NO : Repair the defective connector.

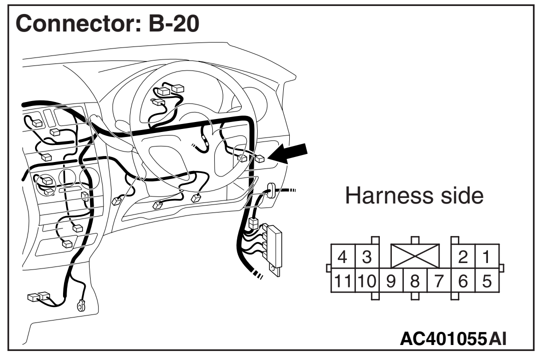
Step 2. Check the remote controlled mirror switch.

Refer to GROUP 51 – Door mirror P.51-43.

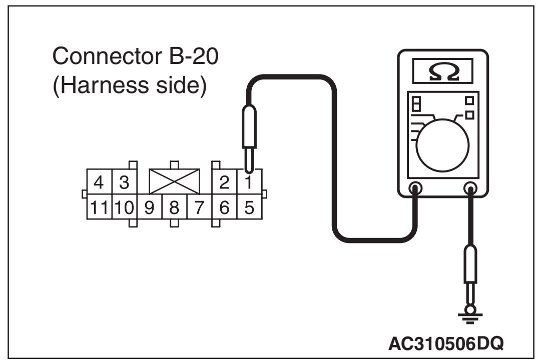
Q: Is the check result normal?

YES : Go to Step 3.
NO : Replace the remote controlled mirror switch.

Step 3. Resistance measurement at the B-20 remote controlled mirror switch connector.



(1) Disconnect the connector, and measure at the wiring harness side.



(2) Continuity between B-20 remote controlled mirror switch connector terminal No.1 and body earth

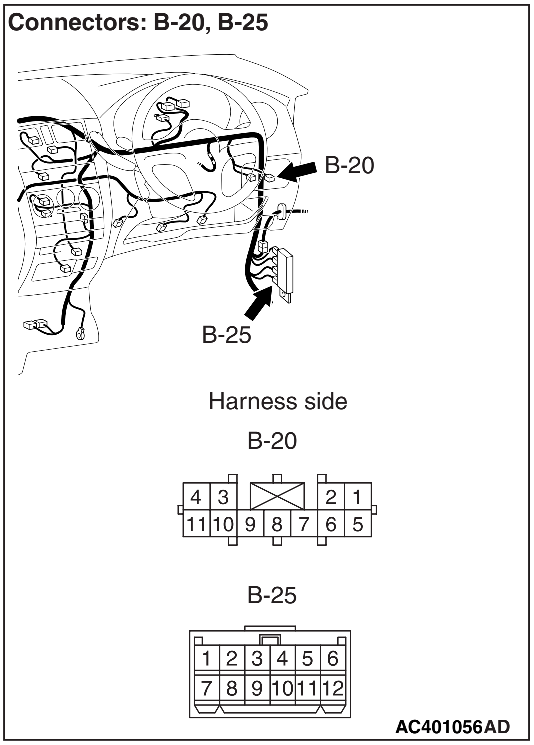
OK: Continuity exists (2 Ω or less)

Q: Is the check result normal?

YES : Go to Step 5.
NO : Go to Step 4.

Main Index
Group TOC

Step 4. Check the wiring harness between B-20 remote controlled mirror switch connector terminal No.1 to body earth.



NOTE: Prior to the wiring harness inspection, check joint connector B-25, and repair if necessary.

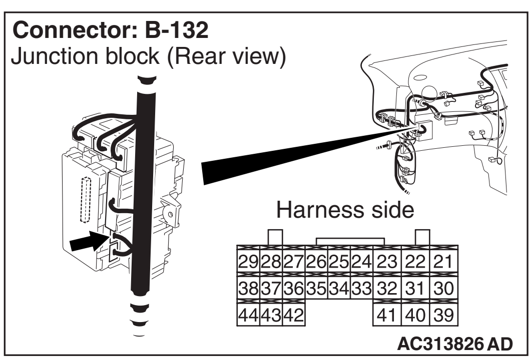
- Check the earth wires for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 5. Connector check: B-132 ETACS-ECU connector

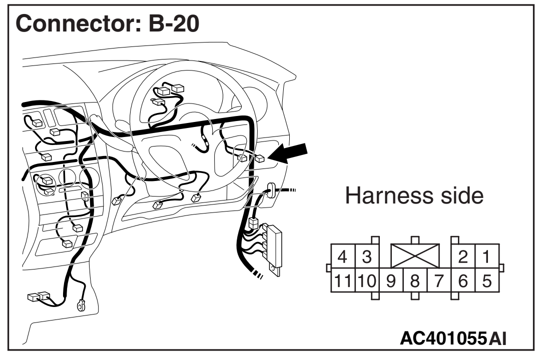


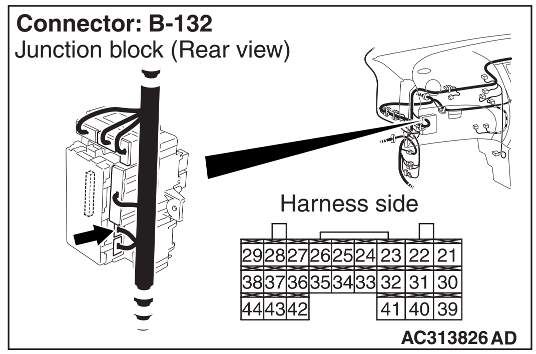
Q: Is the check result normal?

YES : Go to Step 6.

NO : . Repair the defective connector.

Step 6. Check the wiring harness between B-20 remote controlled mirror switch connector terminal No.4 to B-132 ETACS-ECU connector terminal No.27.





- Check the input line for open circuit.

Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the wiring harness.

Step 7. ETACS switch data by using the SWS monitor

Check the input signal from the remote controlled mirror switch.

- Ignition switch: ON
- Remote controlled mirror (folding/unfolding) switch: from OFF to ON

Item No.	Item name	Normal condition
Item 14	EL RET MIR SW	OFF to ON (only when switch is operated)

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

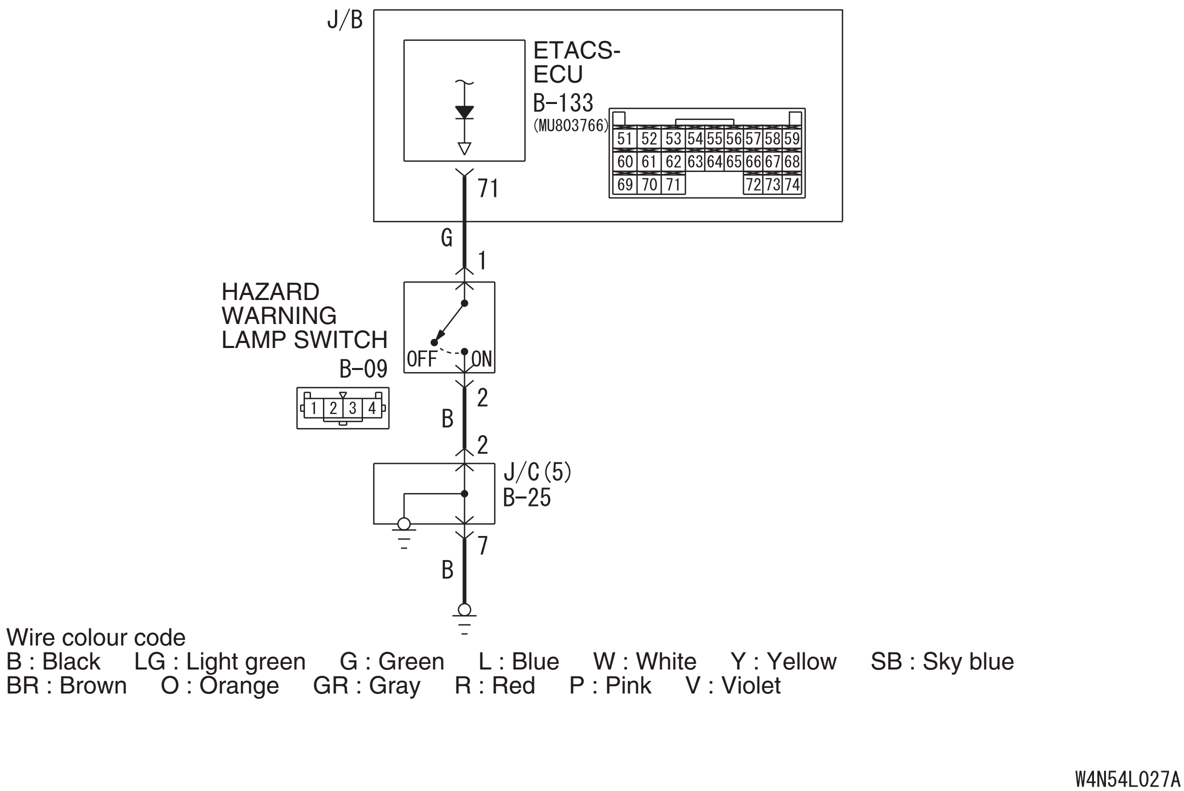
NO : Replace the ETACS-ECU.

Main Index
Group TOC

Inspection Procedure N-9: The hazard warning lamp switch signal is not received.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

Hazard Warning Lamp Switch Input Circuit



COMMENTS ON TROUBLE SYMPTOM

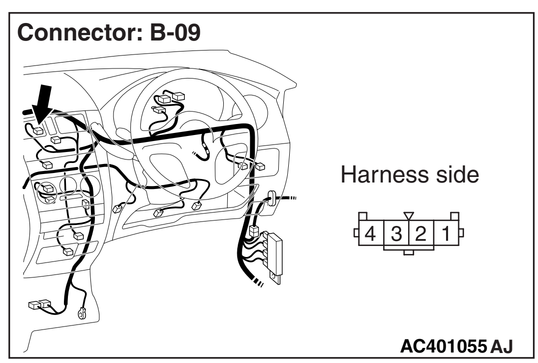
Input signal from the hazard warning lamp switch is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

POSSIBLE CAUSES

- Malfunction of the hazard warning lamp switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

Step 1. Connector check: B-09 hazard warning lamp switch connector



Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

Main Index
Group TOC

Step 2. Check the hazard warning lamp switch.

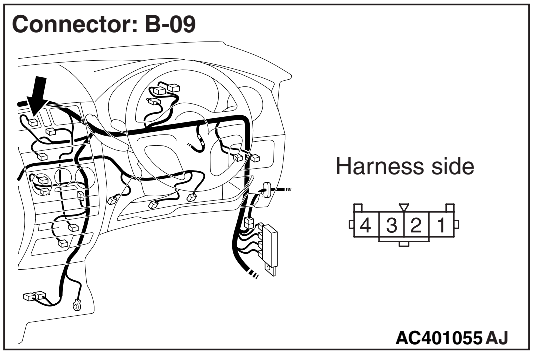
Refer to GROUP 54A – Hazard warning lamp switch P.54A-87.

Q: Is the check result normal?

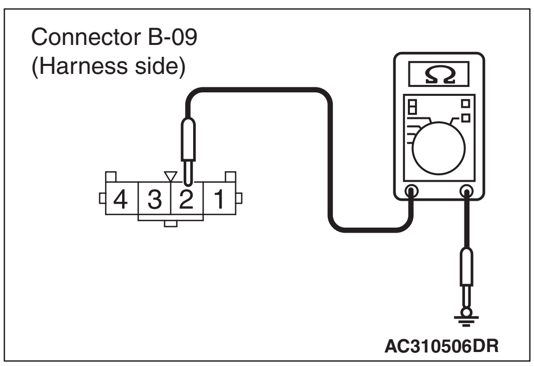
YES : Go to Step 3.

NO : Replace the hazard warning lamp switch.

Step 3. Resistance measurement at the B-09 hazard warning lamp switch connector.



(1) Disconnect the connector, and measure at the wiring harness side.



(2) Resistance between B-09 hazard warning lamp switch connector terminal No.2 and body earth

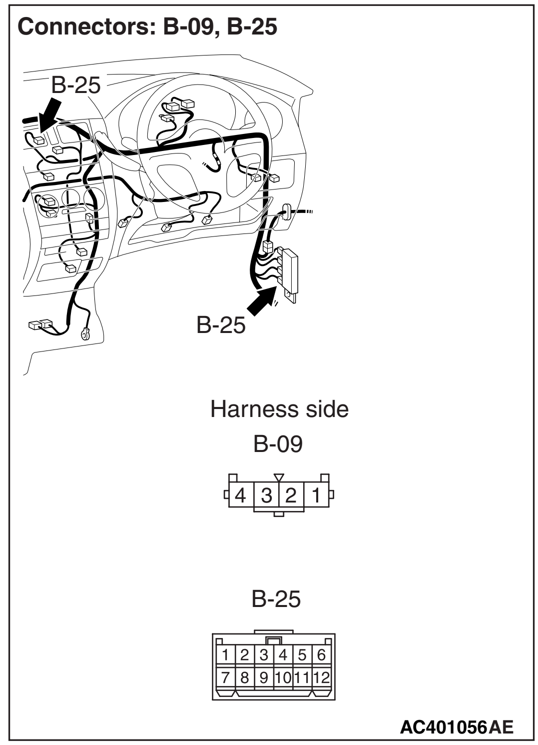
OK: Continuity exists (2 Ω or less)

Q: Is the check result normal?

YES : Go to Step 5.

NO : Go to Step 4.

Step 4. Check the wiring harness between B-09 hazard warning lamp switch connector terminal No.2 to the body earth.



NOTE: Prior to the wiring harness inspection, check joint connector B-25, and repair if necessary.

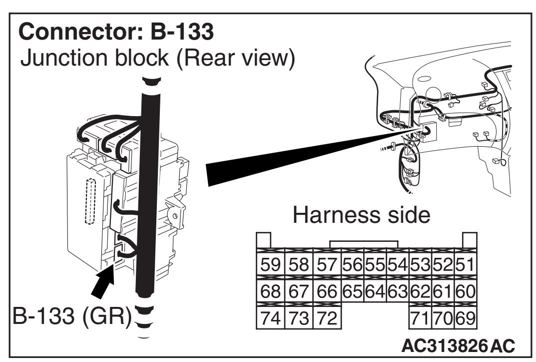
- Check the input line for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 5. Connector check: B-133 ETACS-ECU connector



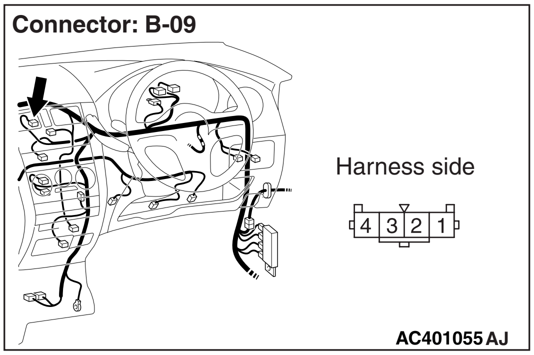
Q: Is the check result normal?

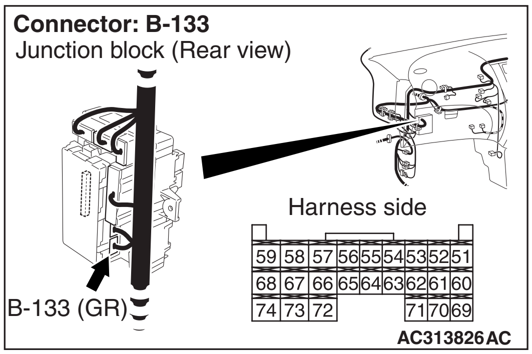
YES : Go to Step 6.

NO : Repair the defective connector.

Main Index
Group TOC

Step 6. Check the wiring harness between B-133 ETACS-ECU connector terminal No.71 to B-09 hazard warning lamp switch connector terminal No.1.





- Check the input line for open circuit.

Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the wiring harness.

Step 7. ETACS switch data by using the SWS monitor

Check the input signal from the hazard warning lamp switch.

- hazard warning lamp switch: from OFF to ON

Item No.	Item name	Normal condition
Item 04	HAZARD LMP SW	OFF to ON (only when switch is operated)

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

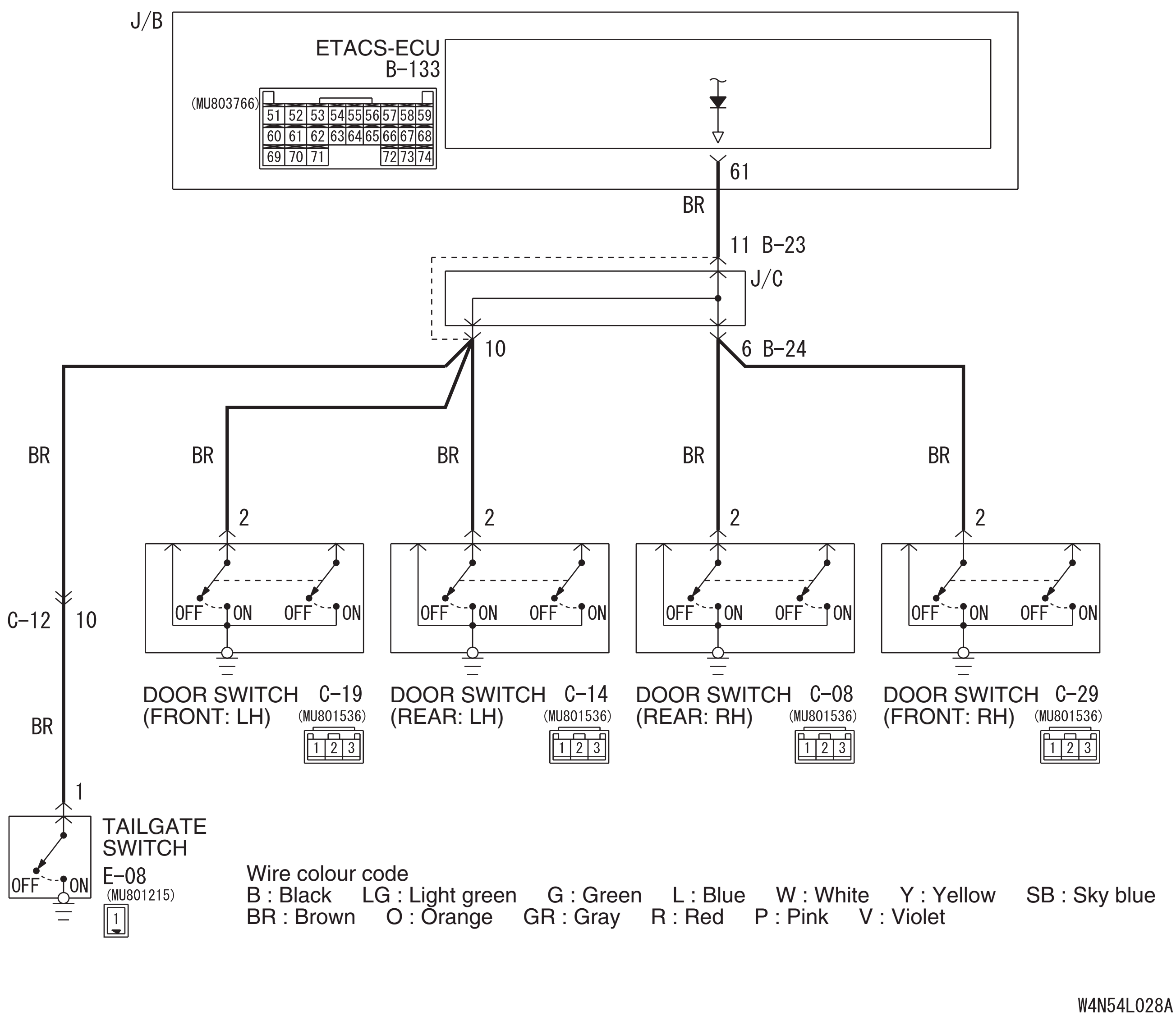
NO : Replace the ETACS-ECU.

Main Index
Group TOC

Inspection Procedure N-10: All the door switch signals are not received.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

Door Switches Input Circuit



COMMENTS ON TROUBLE SYMPTOM

Input signals from all the door switches are used to operate the functions below. If the signal(s) are abnormal, these functions will not work normally.

- Door-ajar warning buzzer
- Keyless entry system
- Room lamp
- Door-ajar warning lamp

POSSIBLE CAUSES

- Malfunction of the door switches
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

Main Index
Group TOC

DIAGNOSIS PROCEDURE

Step 1. SWS monitor data list

<Selected item> ETACS ECU

- Driver's door is open

Item No.	Item name	Normal condition
Item 32	DR DOOR SW	ON

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to inspection procedure N-3 "The driver's door switch signal is not received P.54C-205."

Step 2. ETACS switch data by using the SWS monitor

Check the input signal from the passenger's door switch.

- Passenger's door: Close → Open

Item No.	Item name	Normal condition
Item 05	PASS DOOR SW	from OFF to ON

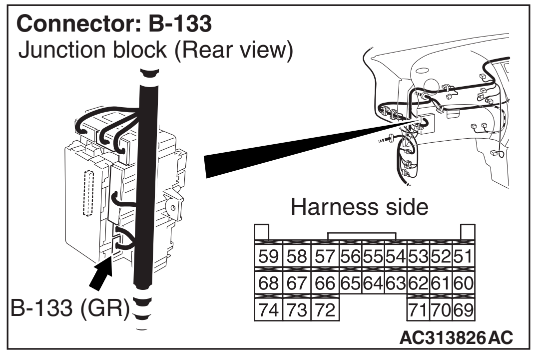
OK: Normal condition is displayed.

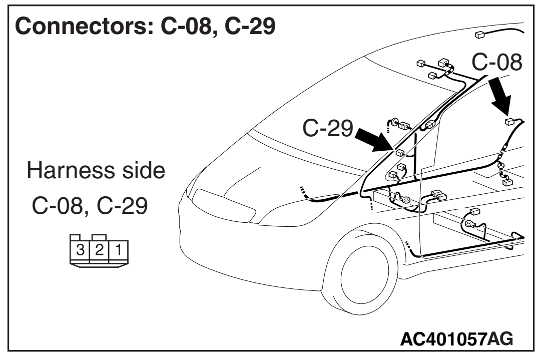
Q: Is the check result normal?

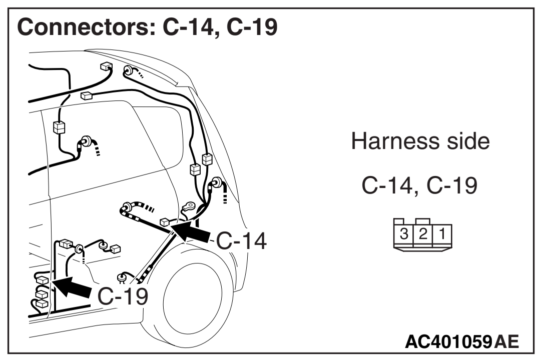
YES : Go to Step 3.

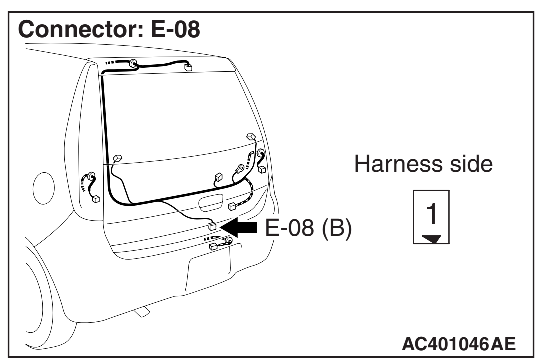
NO : Refer to inspection procedure N-14 "The passenger's door switch signal is not received P.54C-234."

Step 3. Connectors check: C-29 (front: RH), C-19 (front: LH), C-08 (rear: RH) or C-14 (rear: LH) door switch connectors or E-08 <tailgate> tailgate switch connector, and B-133 ETACS-ECU connector









Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair the defective connector.

Main Index
Group TOC

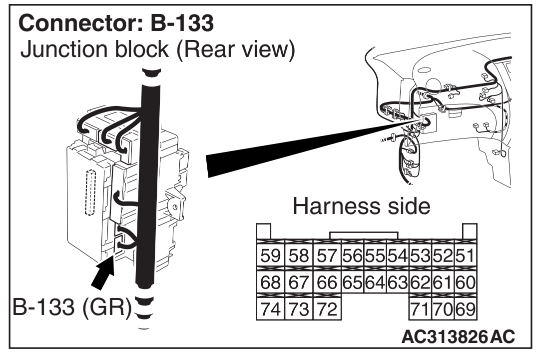
Step 4. Check the installation condition.
Check that the door switch is installed on the body correctly.

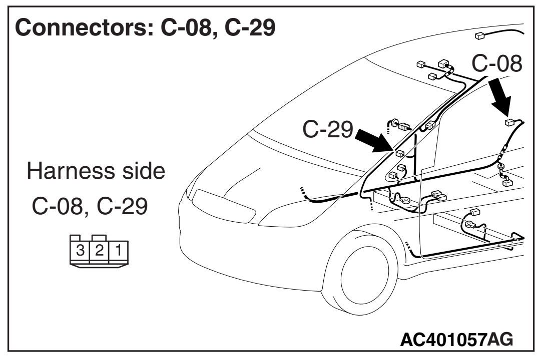
Q: Is the check result normal?
YES : Go to Step 5.
NO : Correct the installation condition.

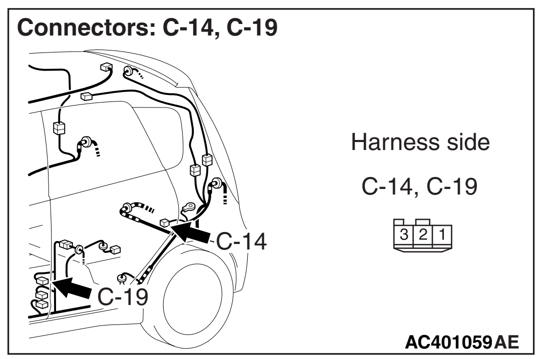
Step 5. Check the door switch.
Refer to GROUP 42 – Door P.42-39.

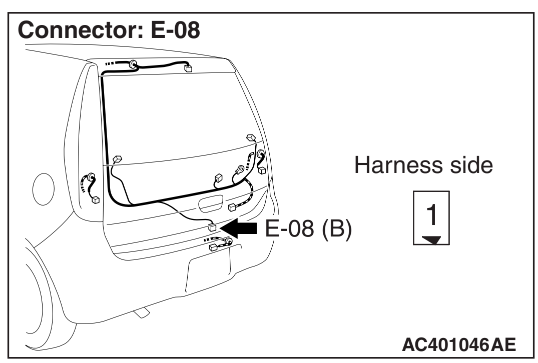
Q: Is the check result normal?
YES : Go to Step 6.
NO : Replace the door switch.

Step 6. Check the wiring harness from terminal No.2 of the C-29 (front: RH), C-19 (front: LH), C-08 (rear: RH) or C-14 (rear: LH) door switch connector or terminal No.1 of the E-08 tailgate switch connector to terminal No.61 of the B-133 ETACS-ECU connector.

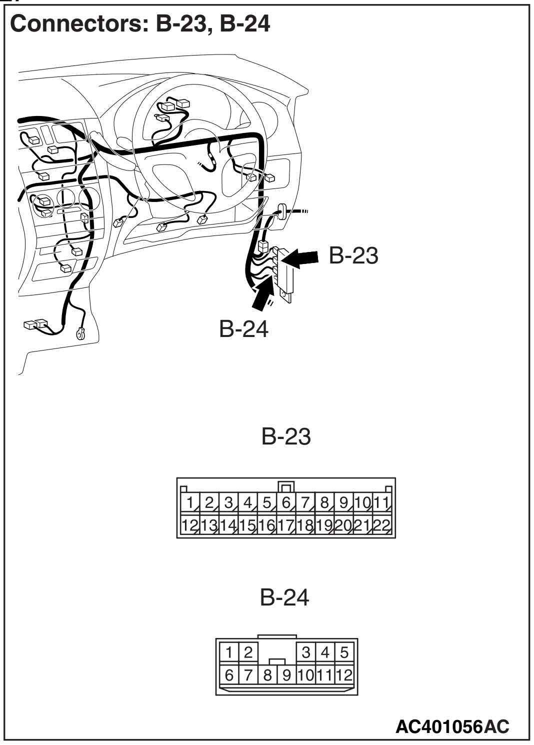


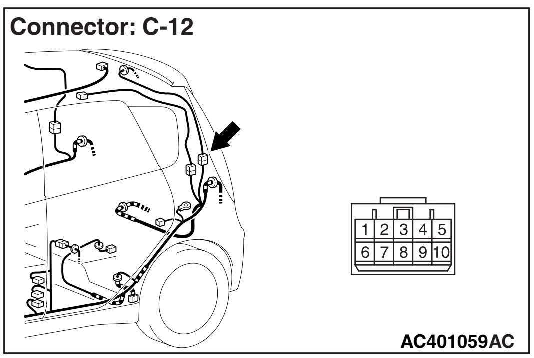






NOTE:





Prior to the wiring harness inspection, check intermediate connector C-12 <tailgate> and junction block connector B-23 or B-24 <RH> and repair if necessary.

- Check the input line for open circuit.

Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the wiring harness between each of the door switches and the ETACS-ECU.

Step 7. ETACS switch data by using the SWS monitor

Check the input signals from the door switches.

- Doors other than the driver's door: Closed to open

Item No.	Item name	Normal condition
Item 40	ALL DOOR SW	ON

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

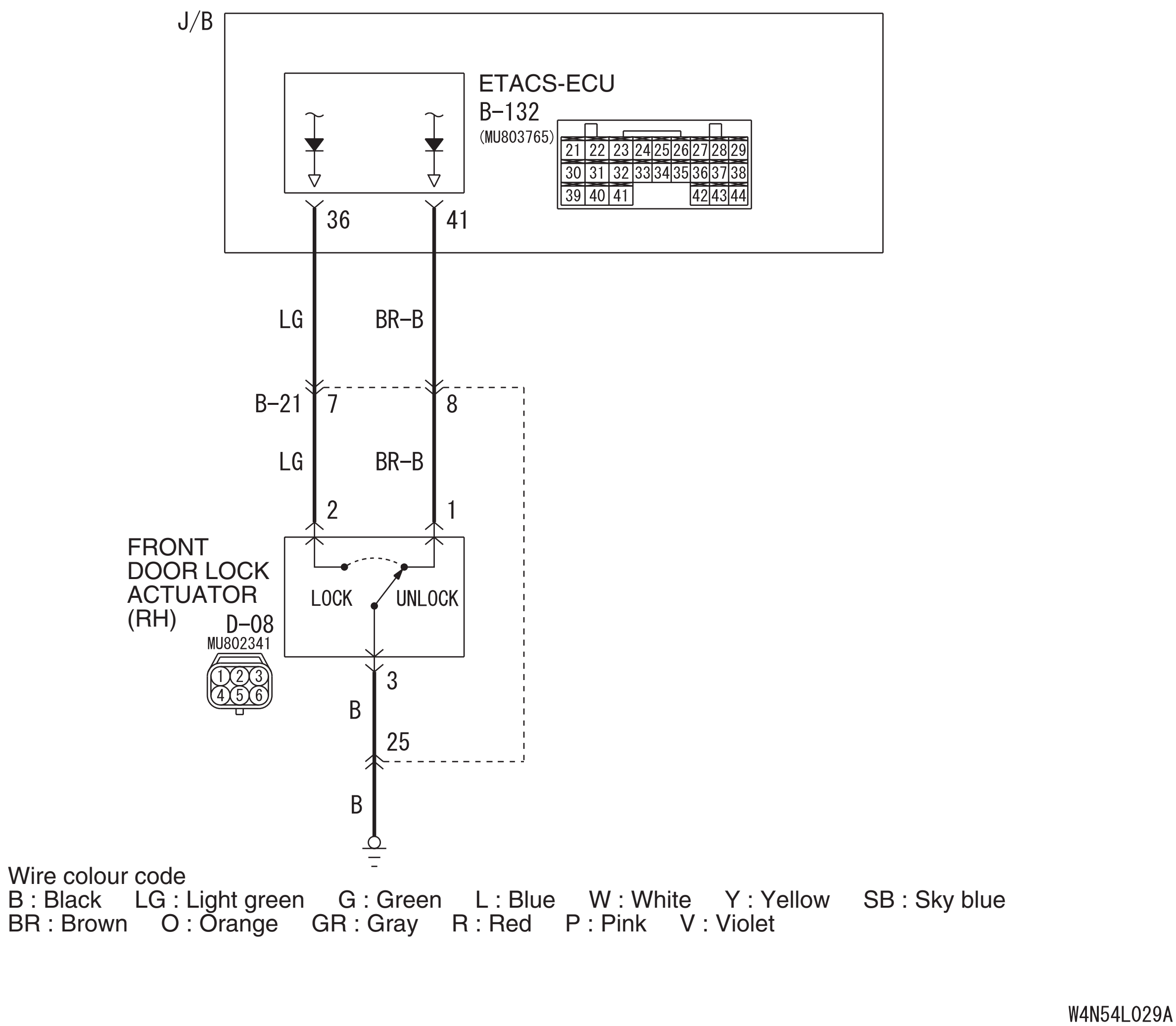
NO : Replace the ETACS-ECU.

Main Index
Group TOC

Inspection Procedure N-11: The driver's door lock actuator switch signal is not received.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

Door Lock Actuator Input Circuit



COMMENTS ON TROUBLE SYMPTOM

Input signal from the driver's door lock actuator is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

- Central door locking
- Room lamp

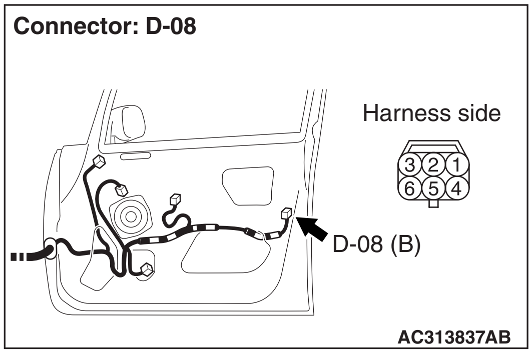
POSSIBLE CAUSES

- Malfunction of the front door lock actuator (RH)
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

Main Index
Group TOC

DIAGNOSIS PROCEDURE

Step 1.Connector check: D-08 front door lock actuator (RH) connector



Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the defective connector.

Step 2. Check the front door lock actuator (RH).

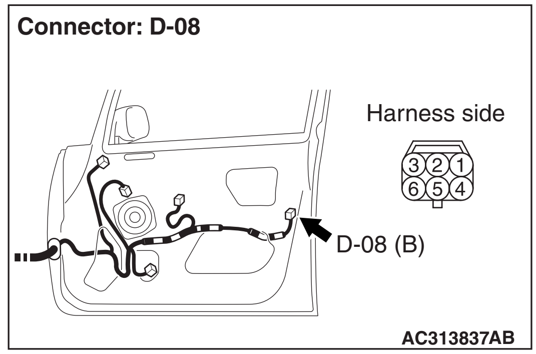
Refer to GROUP 42 – Door P.42-46.

Q: Is the check result normal?

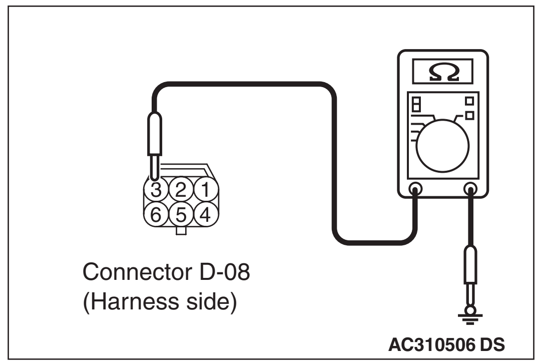
YES : Go to Step 3.

NO : Replace the front door lock actuator (RH).

Step 3. Resistance measurement at the D-08 front door lock actuator (RH) connector



(1) Disconnect the connector, and measure at the wiring harness side.



(2) Resistance between D-08 front door lock actuator (RH) connector terminal No.3 and body earth

OK: Continuity exists (2 Ω or less)

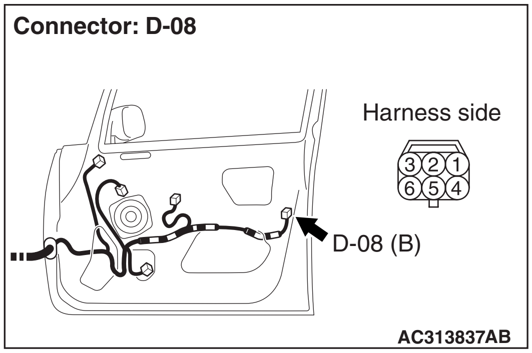
Q: Is the check result normal?

YES : Go to Step 5.

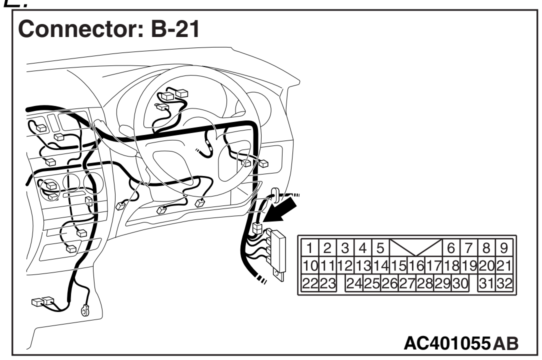
NO : Go to Step 4.

Main Index
Group TOC

Step 4. Check the wiring harness between D-08 front door lock actuator (RH) connector terminal No.3 to body earth D-08



NOTE:



Prior to the wiring harness inspection, check intermediate connector B-21, and repair if necessary.

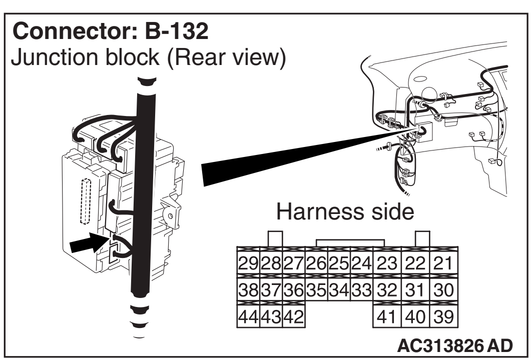
- Check the earth wires for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 5. Connector check: B-132 ETACS-ECU connector

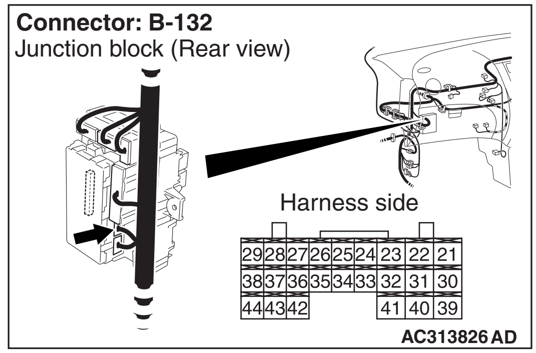


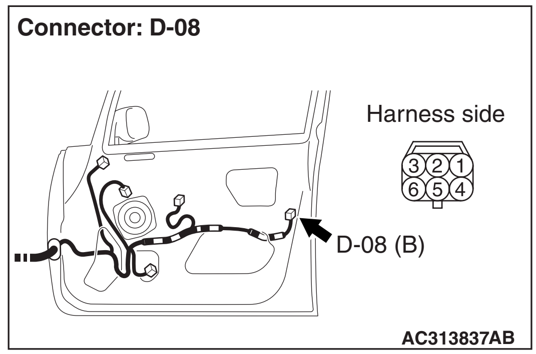
Q: Is the check result normal?

YES : Go to Step 6.

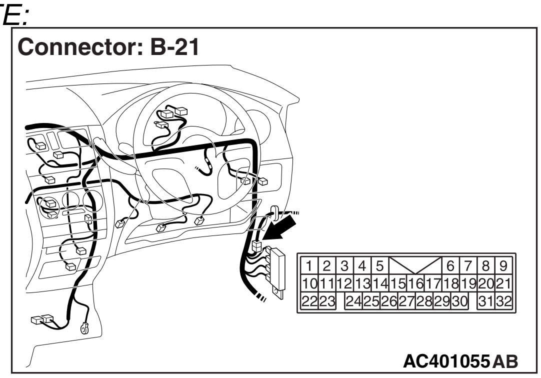
NO : Repair the defective connector.

Step 6. Check the wiring harness from D-08 front door lock actuator (RH) connector terminal No.1 and 2 to B-132 ETACS-ECU connector terminal No.41 and 36.





NOTE:



Prior to the wiring harness inspection, check intermediate connector B-21, and repair if necessary.

- Check the input line for open circuit.

Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the wiring harness.

Main Index
Group TOC

Step 7. ETACS switch data by using the SWS monitor

Check the input signal from the driver's door lock actuator switch.

- Driver's door lock actuator switch: LOCK → UNLOCK

Item No.	Item name	Normal condition
Item 21	DR DOR LCK SW	from ON to OFF
Item 22	DR DOR ULK SW	from OFF to ON

OK: Normal conditions are displayed for all the items.

Q: Are the check results normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

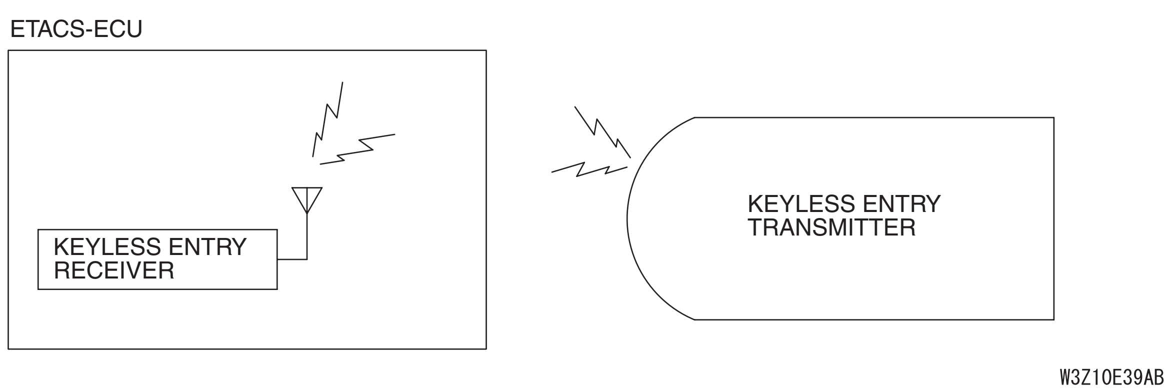
NO : Replace the ETACS-ECU.

Inspection Procedure N-12: Each switch signal of the keyless entry transmitter is not received.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input signal circuit is normal.

Transmitter Input Circuit



COMMENTS ON TROUBLE SYMPTOM

Input signal from the keyless entry transmitter is used to operate the keyless entry system. If the signal is abnormal, the keyless entry system will not work normally.

- Keyless entry system
- Keyless entry hazard answerback
- Multi-mode keyless entry system

POSSIBLE CAUSES

- Malfunction of the keyless entry transmitter
- Defective battery of the keyless entry transmitter
- Malfunction of the ETACS-ECU

Main Index
Group TOC

DIAGNOSIS PROCEDURE

Step1. Use the SWS monitor to examine the keyless entry system for signal reception.

- Use the defective keyless entry system transmitter.
- Examine the signal reception from keyless entry transmitter by operating the key switch. If signals can be received from the transmitter, the monitor screen shows signals relevant to each key switch.

Key switch operation	Display on M.U.T.-III
LOCK switch	LOCK
UNLOCK switch	UNLOCK
Press and hold the LOCK switch for at least one second	LCK LNG PUSH
Press and hold the UNLOCK switch for at least one second	ULCK LNG PUSH

OK: Normal condition are displayed for all items.

Q: Are the check result normal?

Normal condition are displayed for all items : Go to Step3.

Normal conditions are displayed for no items. : Go to Step2.

Normal condition is displayed for either of the items. : Replace the keyless entry transmitter.

Step 2. Register the encrypted code, and then retest the system.

1. Register the keyless entry transmitter again.
2. Check that each signal is received from the keyless entry transmitter.

Q: Is the check result normal?

YES : Accidental erasure of the encrypted code Or the key is mismatched. Check that the customer is an authorised person.

NO : Go to Step 3 (including the case that key registration is not possible).

Step 3. Replace the battery of the keyless entry transmitter, and retest the system.

1. Replace the battery of the keyless entry transmitter.
2. Check that each signal is received from the keyless entry transmitter.

Q: Is the check result normal?

YES : Flat battery.

NO : Go to Step4.

Step 4. Register the encrypted code again by using a known good keyless entry transmitter. Then retest the system.

1. Register a known good keyless entry transmitter (the one which mounting screws are silver).
2. Check that each signal is received from the keyless entry transmitter.

Q: Is the check result normal?

YES : Replace the original keyless entry transmitter.

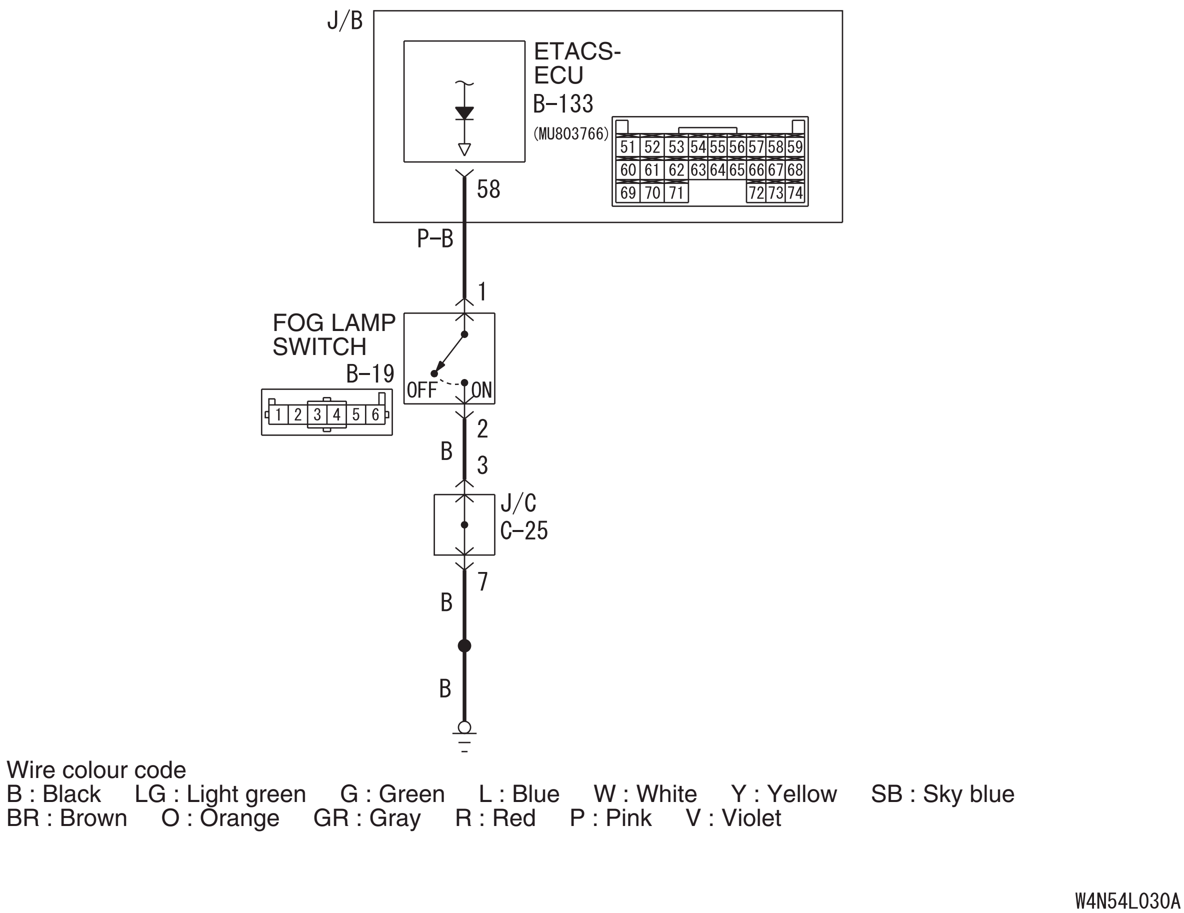
NO : Replace the ETACS-ECU (including the case where registration is impossible).

Main Index
Group TOC

Inspection Procedure N-13: The fog lamp switch signal is not received.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

Fog Lamp Switch Input Circuit



COMMENTS ON TROUBLE SYMPTOM

Input signal from the fog lamp switch is used to operate the fog lamps. If the signal is abnormal, the fog lamps will not illuminate and extinguish normally.

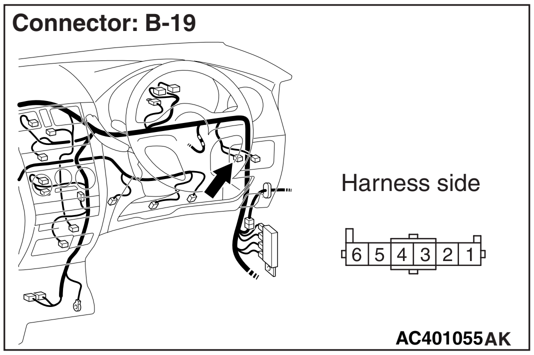
POSSIBLE CAUSES

- Malfunction of the fog lamp switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

Main Index
Group TOC

DIAGNOSIS PROCEDURE

Step 1. Connector check: B-19 fog lamp switch connector



Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the defective connector.

Step 2. Check the front fog lamp switch.

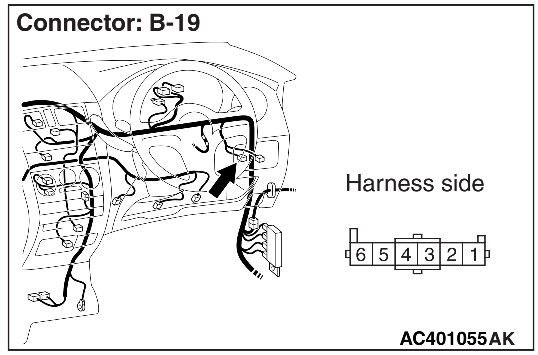
Refer to GROUP 54A – Fog lamp P.54A-79.

Q: Is the check result normal?

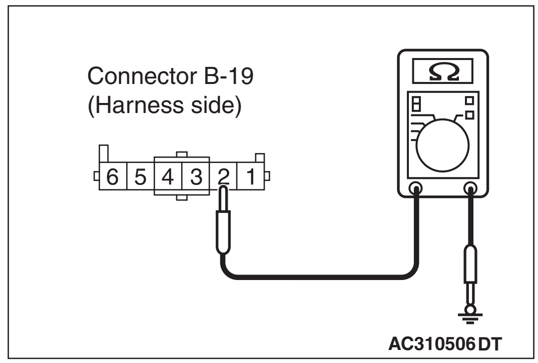
YES : Go to Step 3.

NO : Replace the fog lamp switch.

Step 3. Resistance measurement at the B-19 fog lamp switch connector.



(1) Remove the fog lamp switch, and measure at the wiring harness side.



(2) Resistance between B-19 fog lamp switch connector terminal No.2 and body earth

OK: Continuity exists (2 Ω or less)

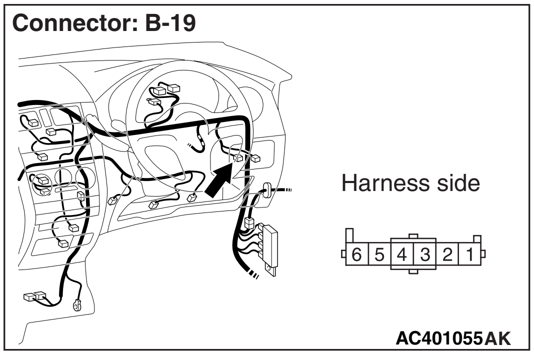
Q: Is the check result normal?

YES : Go to Step 5.

NO : Go to Step 4.

Main Index
Group TOC

Step 4. Check the wiring harness from B-19 fog lamp switch connector terminal No.2 to body earth.



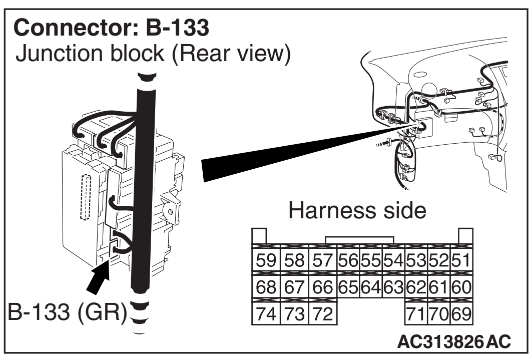
- Check the earth wires for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the wiring harness.

Step 5. Connector check: B-133 ETACS-ECU connector

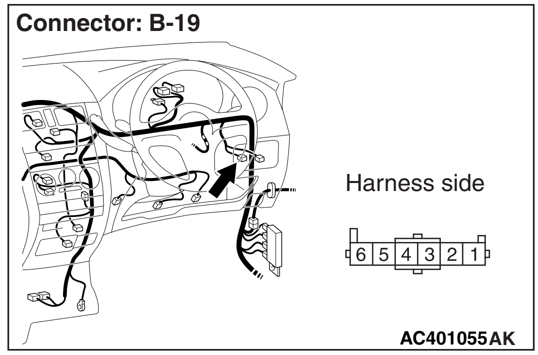


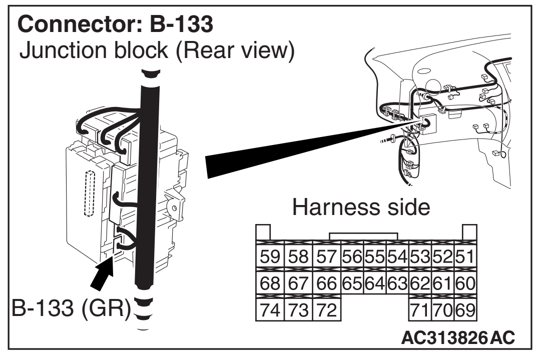
Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair the defective connector.

Step 6. Check the wiring harness from B-133 ETACS-ECU connector No.58 to B-19 fog lamp switch connector terminal No.1.





- Check the input line for open circuit.

Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the wiring harness.

Step 7. SWS monitor data list

Check the input signal from the fog lamp switch.

<Selected item> ETACS ECU

- Ignition switch: ON
- Lighting switch: "TAIL" or "HEAD"
- Fog lamp switch: from OFF to ON

Item No.	Item name	Normal condition
Item 36	F.FOG LAMP	from OFF to ON

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

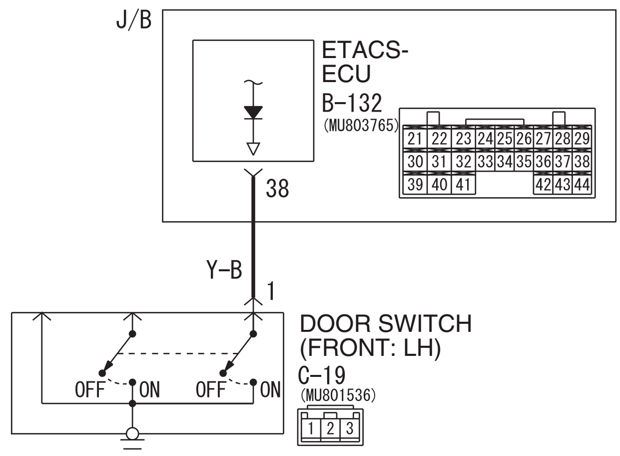
NO : Replace the ETACS-ECU.

Main Index
Group TOC

Inspection Procedure N-14: The passenger's door switch signal is not received.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input signal circuit is normal.

Passenger's Door Switch Input Circuit



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4N54X069A

COMMENTS ON TROUBLE SYMPTOM

Input signal from the passenger's door switch is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

- Power window timer
- Door-ajar warning lamp

POSSIBLE CAUSES

- Malfunction of the passenger's door switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

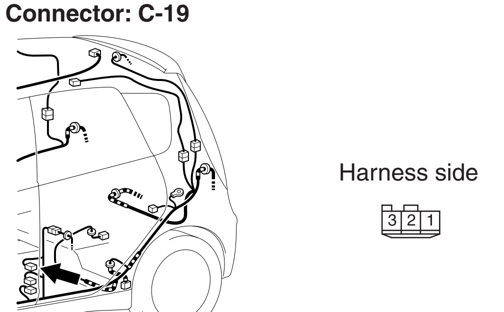
Step 1. Check the installation condition.

Check that the front door switch (LH) is installed on the body correctly.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Correct the installation condition.

Step 2. Connector check: C-19 front door switch (LH) connector.

Connector: C-19



AC401059AG

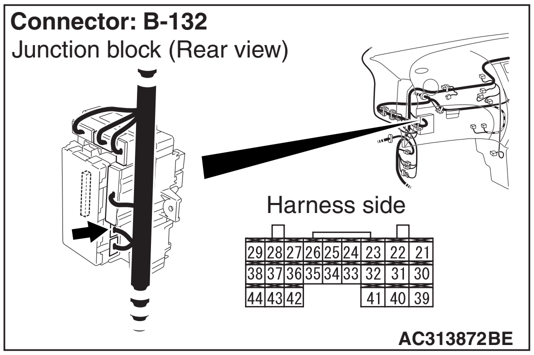
Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

Step 3. Check the front door switch (LH).

Refer to GROUP 42 – Door P.42-39.

Q: Is the check result normal?
YES : Go to Step 4.
NO : Replace the front door switch (LH).

Step 4. Connector check: B-132 ETACS-ECU connector.

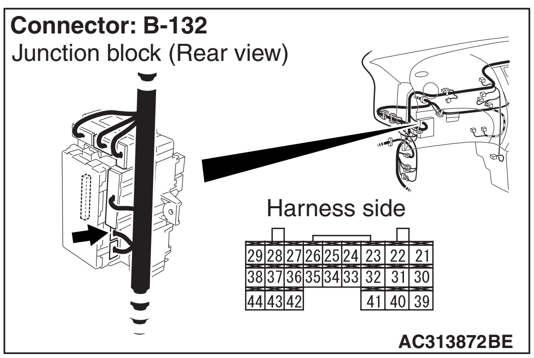


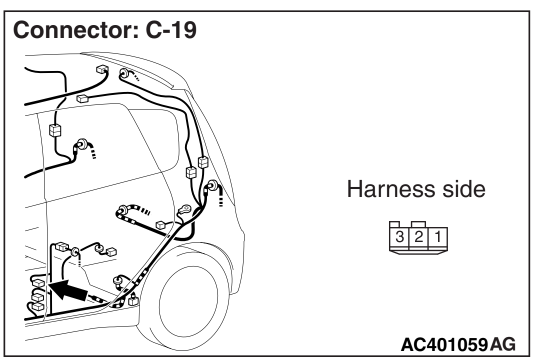
Q: Is the check result normal?

YES : Go to Step 5.

NO : Repair the defective connector.

Step 5. Check the wiring harness between B-132 ETACS-ECU connector terminal No.38 to C-19 front door switch (LH) connector terminal No.1.





- Check the input line for open circuit.

Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair the wiring harness.

Step 6. ETACS switch data by using the SWS monitor

Check the input signal from the passenger's door switch.

- passenger's door: close → open

Item No.	Item name	Normal condition
Item 05	PASS DOOR SW	from OFF to ON

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-13).

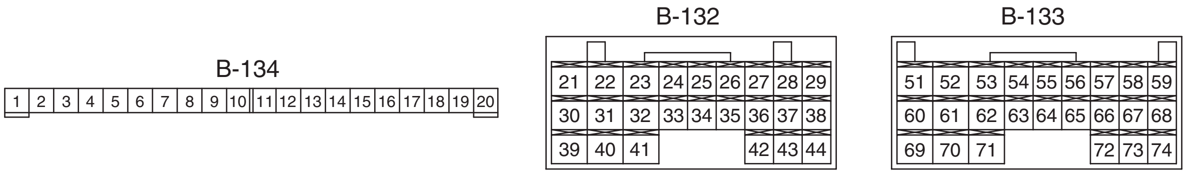
NO : Replace the ETACS-ECU.

Main Index
Group TOC

CHECK AT ECU TERMINAL

M1549001201097

ETACS-ECU



AC207565AB

NOTE: Terminal numbers 1 to 20 can not be measured as the ETACS-ECU is mounted on the junction block directly. The values are for reference only.

Terminal No.	Check item	Check condition	Normal condition
1	Power supply to the central door locking system (battery positive voltage)	Always	System voltage
2	Earth (for ECU)	Always	0 V
3	Output to left turn-signal lamps	When the left turn-signal lamps are on	System voltage
4	Output to right turn-signal lamps	When right turn-signal lamps are on	System voltage
5	Power supply to hazard warning lamp (battery positive voltage)	Always	System voltage
6	Input of windshield wiper automatic stop signal	When windshield wiper is operating	System voltage
7	Output to windshield wiper (high speed operation)	When windshield wipers are operating at high speed	System voltage
8	Output to windshield wiper (low speed operation)	When windshield wipers are operating at low speed	System voltage
9	Windshield washer output	When windshield washer is operating	System voltage
10	Ignition switch (ACC)	Ignition switch: ACC	System voltage
11	Ignition switch (ACC)	Ignition switch: ACC	System voltage
12	Rear washer output	When rear washer is operating	System voltage
13	Rear wiper output	When rear wiper is operating	System voltage
14	Input of rear wiper automatic stop signal	When rear wiper is operating	System voltage
15	Output to tail lamps	When tail lamps are on	System voltage
16	Battery power supply (for tail lamp)	Always	System voltage
17	Output to low-beam headlamps	When low-beam headlamps are on	System voltage
18	Output to room lamp	When room lamps are on	2 V or less
19	Output to high-beam headlamps	When high-beam headlamps are on	System voltage

Main Index
Group TOC

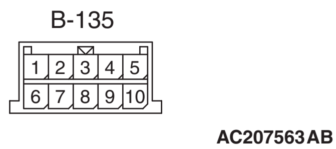
Terminal No.	Check item	Check condition	Normal condition
20	Battery power supply (for ECU)	Always	System voltage
21	Output to electric retractable remote controlled mirror (RH)	When the door mirrors are unfolding	12 V
22	Output to central door locking (for unlocking the doors other than the driver's door)	When the door lock actuators unlock the doors	System voltage
23	Output to central door locking (for locking the doors)	When the door lock actuators lock the doors	System voltage
24, 25	–	–	–
26	Input to driver's door lock actuator (lock switch)	Driver's door lock: Locked	0 V
27	Input from remote controlled mirror switch (fold/unfold switch)	Remote controlled mirror switch (fold/unfold switch): ON	0 V
28, 29	–	–	–
30	Output to electric retractable remote controlled mirror (LH)	When the door mirrors are unfolding	12 V
31 – 34	–	–	–
35	Input to driver's door lock actuator (unlock switch)	Driver's door lock: Unlocked	0 V
36	Input to driver's door lock actuator (lock switch)	Driver's door lock: Locked	0 V
37	–	–	–
38	Input to door switch (front: LH)	Door switch (front: LH): ON (door open)	0 V
39	Output to electric retractable remote controlled mirror (RH)	When the door mirrors are folding	System voltage
40	Output to electric retractable remote controlled mirror (LH)	When the door mirrors are folding	System voltage
41	Input to driver's door lock actuator (unlock switch)	Driver's door lock: Unlocked	0 V
42 – 44	–	–	–
51	Input to door switch (front: RH)	Door switch (front: RH): ON (door open)	0 V
52	Setting diagnosis code or sending input check signal	When diagnosis code is set (the M.U.T.-III is connected or the diagnosis connector No.1 is earthed)	0 to 12 V (pulse signal)
		When input check signal is sent	0 V, 12 V (input signal is fluctuating)
53	Input to key reminder switch	Key reminder switch: ON (ignition key removed)	0 V
54	SWS communication line	Always	0 to 12 V (pulse signal)
55 – 57	–	–	–

Main Index
Group TOC

Terminal No.	Check item	Check condition	Normal condition
58	Input to fog lamp switch	Fog lamp switch: ON	0 V
59	Out put to power window relay	When the power windows are operative	System voltage
60	Back-up input from headlamp switch	Headlamp switch: ON	0 V
61	Input from all the door switches	One of the door switches: ON (door open)	0 V
62	Output to ignition key cylinder illumination lamp	When ignition key cylinder illumination is on	2 V or less
63	Input of SWS request signal	Always	0 to 12 V (pulse signal)
64	Back-up input from windshield wiper switch	Windshield low-speed wiper switch or windshield high-speed wiper switch: ON	0 V
65, 66	–	–	–
67	Output to fog lamp	When fog lamp is on	System voltage
68	Power supply from ignition switch (IG1)	Ignition switch: ON	System voltage
69	Input from diagnosis control	When M.U.T.-III is connected	0 V
70	Earth (for sensor)	Always	0 V
71	Input to hazard lamp switch	Hazard lamp switch: ON	0 V
72	–	–	–
73	Input from windshield intermittent wiper volume	Turn the ignition switch to the ACC position, and move the wiper volume from "Fast" to "Slow."	0 to 2.5 V
74	Ignition switch (ACC)	Ignition switch: ACC	System voltage

Main Index
Group TOC

COLUMN SWITCH



Terminal No.	Check item	Check condition	Normal condition
1	System voltage	Always	System voltage
2	Input of SWS request signal	Always	0 to 12 V (pulse signal)
3	SWS communication line	Always	0 to 12 V (pulse signal)
4	Earth	Always	0 V
5	–	–	–
6	Output to windshield intermittent wiper volume	Ignition switch: ACC Move the wiper volume from "Fast" to "Slow."	0 to 2.5 V
7	–	–	–
8	Back-up output to windshield wiper switch	Windshield low-speed wiper switch or windshield high-speed wiper switch: ON	0 V
9	Power supply from ignition switch (IG1)	Ignition switch: ON	System voltage
10	Back-up output to headlamp switch	Headlamp switch: ON	0 V

Main Index
Group TOC

ON-VEHICLE SERVICE

CUSTOMISE FUNCTION

M1549002501444

Using M.U.T.-III adjusts the following function. The programmed information is held even when the battery is disconnected.

- Vehicle speed-dependent wiper function

With the windshield wiper switch in the intermittent position, the intermittent duration changes depending on the intermittent adjusting knob position and the vehicle speed.

- The selector "P" position-linked central door unlocking function <CVT>

When the selector lever is shifted to the "P" position, all the doors unlock.

- Turn-signal lamp operation sound function

Synchronized with the hazard lamp and the turn signal lamp, the buzzer sounds.

- Dimmer interior lamp control duration

When the door is closed with the ignition switch LOCK (OFF), the interior lamp is turned OFF automatically in the specified time.

- Timer lock time after executing the keyless entry unlock

If any door including a tailgate is not opened after being unlocked with the keyless transmitter, doors are locked automatically within the specified time.

- Door-ajar warning function

Driving with any door, including a tailgate, not properly closed sounds the buzzer to let the driver know the door-ajar state.

- Rear wiper intermittent duration

When the rear wiper switch is turned ON, the rear wiper operates in the intermittent action. When the rear wiper switch is turned from OFF to ON two cycles, the rear wiper makes continuous operation regardless of the intermittent operation duration setting.

- Wiper linked with washer function

When this function is active, the windshield wiper operates if the washer switch is turned ON.

- Hazard answer back function of the keyless entry system

When lock/unlock is operated with the keyless entry transmitter, the horn sounds so that the driver can recognize the lock/unlock status of the vehicle even if the driver is away from it.

- Initialising all functions (Returning to the initial condition)

All adjusting functions are returned to the settings at the time of factory shipment.

Item No.	Items shown on M.U.T.-III screen	Item	Adjustment items shown on M.U.T.-III screen	Adjusting contents
4	SPEED SEN WIP	Vehicle speed-dependent wiper function	W.FUNCTION	With function (Initial setting)
			W/O FUNCTION	Without function
9	KEYLESS(HAZD)	Hazard answer back function of the keyless entry system	LOCK/UNLOCK	With function for lock/unlock (the initial condition)
			LOCKED	With function only for lock
			UNLOCKED	Without function only for unlock
			W/O FUNCTION	Without function
14	P UNLOCK ACT.	Door unlock function linked with "P" position shift for centre door lock system	W.FUNCTION	With function
			W/O FUNCTION	Without function (the initial condition)
15	T/SIG.BUZZER	Turn-signal lamp operation sound function	W.FUNCTION	With function
			W/O FUNCTION	Without function (the initial condition)

Main Index
Group TOC

Item No.	Items shown on M.U.T.-III screen	Item	Adjustment items shown on M.U.T.-III screen	Adjusting contents
16	RM LMP TN OFF	Dimmer interior lamp control duration	60s	60 seconds
			30s	30 seconds
			15s	15 seconds (the initial condition)
			7.5s	7.5 seconds
			W/O FUNCTION	0 second (no delay action)
24	KEYLES LOCK T	Timer lock time after executing the keyless entry unlock	30s	30 seconds (the initial condition)
			60s	1 minute
			120s	2 minutes
			180s	3 minutes
26	DOOR WARN BUZ	Door-ajar warning function	W.FUNCTION	With function (Initial setting)
			W/O FUNCTION	Without function
28	R.INT WIPER T	Rear wiper intermittent duration	8s	8 seconds: Without continuous operation (Initial setting)
			4s(W SUCSSON)	4 seconds: With continuous operation
			8s(W SUCSSON)	8 seconds: With continuous operation
			16s(W SUCSSON)	16 seconds: With continuous operation
			CONTIN ACTION	Continuous operation (without the intermittence)
37	WIP SYCR WASH	Wiper linked with washer function	W.FUNCTION	With function (Initial setting)
			W/O FUNCTION	Without function
38	KEYLES HAZARD	Customise function for changing the number of the keyless hazard warning lamp answerback flashing	LOCK1,UNLOCK2	LOCK: Flash once, UNLOCK: Flash twice (Initial setting) Whether the lamps flash or not is determined by the keyless hazard warning lamp answerback customisation function.
			LOCK2,UNLOCK1	LOCK: Flash twice, UNLOCK: Flash once Whether the lamps flash or not is determined by the keyless hazard warning lamp answerback customisation function.
39	TURN-SIGNA L	Turn signal lamp operation condition adjustment function	IG-ON	Turn signal lamp can be operated when the ignition switch is turned ON (Initial setting).
			IG-ACC	Turn signal lamp can be operated when the ignition switch 1 is in ACC or ON position.